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GYNÆCOLOGY

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IN

GYNÆCOLOGY

BY

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WITH EIGHTEEN PLATES

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PREFACE TO THE FIRST EDITION

"Of those whom Providence has qualified to make any additions to human knowledge, the number is extremely small, and what can be added by each single mind, even of this superior class, is very little; the greatest part of mankind must owe all their knowledge, and all must owe far the larger part of it, to the information of others. To understand the works of celebrated authors, to comprehend their systems, and retain their reasonings, is a task more than equal to common intellects; and he is by no means to be accounted useless or idle who has stored his mind with acquired knowledge, and details it occasionally to others who have less leisure or weaker abilities."

Essay of Dr. Johnson, from "The Adventurer."

These chapters are reprints of a series of communications which appeared in the *Edinburgh Medical Journal*, and which were written for it by the Author at the request of the Editor.

SECOND EDITION

A Second Edition of this little book has been called for within a few months. The Author is grateful for the many acknowledgments he has had of the practical value of the papers it contains. Some new plates, and a chapter on Retroversion of the Uterus, have been added. I have to express my thanks to the artist, Mr. S. A. Sewell, for the care and pains he has taken in the execution of the plates.

H. M.-J.

131, Harley Street,
July, 1901.

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CHAPTER I

SOME POINTS IN GYNÆCOLOGICAL ASEPSIS*

I TRUST that nothing contained in these pages will be regarded in the light of a criticism of the views or practice of others. I am far too conscious of my own "shortcomings" to attempt this. Each one can best judge for himself how far his own "achievements" justify him in assuming the *rôle* of prophet. Most of us are satisfied if we can contribute our mite to the general treasury of experience. This can only be of real value if it be the outcome of conscientious work carefully done, and the result of educated observation. Inspired teachers are few, and even when one does, now and then, here and there, appear, his inspiration or audacity is more frequently but the germ from which, through the collective labours of others, the future development of the art it enriches progresses. This must be the consolation of ordinary and commonplace workers. The ants teach us a great lesson in their capacity for work, their distribution of duty, their tenacity of purpose, and their contempt of difficulties. So, the most commonplace of us mortals may help in that which, after all is said, is a will-o'-the-wisp effort to reach *ideal* perfection, whether in principles of practice or methods of technique.

* In the eighth edition of "Diseases of Women and Uterine Therapeutics" all the appliances for a complete installation are described and figured, and the whole question of asepsis and antisepsis is discussed.

The last few years have seen the emergence of this most important department of surgery which we call gynæcology from a comparative state of chaotic confusion, in which those practising in it were previously struggling. The surgery of the pelvic organs of women takes rank with that of the abdominal viscera and the brain; progress in all three has completely revolutionised the treatment of disorders of the generative organs of women, those of the various abdominal viscera, and the many obscure conditions of the nervous system, cerebral and spinal, which modern neurology has elucidated. Gynæcology, however, as now practised, covers in its operations a much larger field than would be included by the treatment of the pelvic organs alone. This widening of its sphere resulted as a natural consequence of the many abdominal complications met with in connection with pelvic diseases. Operations for the latter revealed errors in diagnosis which compelled the gynæcologist to deal with unforeseen conditions and complications that practically involved the entire surgery of the abdomen. Tumours of the spleen, morbid states, growths and displacements of the kidney, affections of the intestines complicating uterine tumours and adnexal diseases, or unavoidable accidents to the bowel arising in the course of an operation, all necessitated immediate action on the part of the surgeon when the abdominal cavity was opened. Thus the surgery of the spleen, the kidney, and the bowel, as well as that of the generative organs, the rectum, the ureters, and bladder, has of necessity to be included within the range of modern gynæcology. While, strictly speaking, this is true, it is of course obvious that the gynæcological surgeon is more occupied by and principally interested in morbid states of the uterus and adnexa, and the more commonly occurring complications arising out of involvement of the genito-urinary organs and rectum, that he meets with in operating for these. And, so far as operative procedures are concerned, I have here only to deal with these.

As in other branches of the surgical art, the gradual evolution of gynæcology, in its application to diseases of the sexual organs of women, rests on the triple basis of anæsthesia, asepsis, and hæmostasis. In our natural desire

to record our most striking surgical successes, we are too often led by a rather selfish egoism to forget altogether, or at least to minimise, the extent to which we are indebted for our results to the skilful administration of an anæsthetic. A prolonged operation is frequently one in which there is considerable loss of blood, and as a consequence associated shock; yet it is often under these very conditions that we require the full anæsthetic effect, and while we demand absolute immobility of the patient, we trust entirely to the skill of the administrator, and trouble ourselves only with immediate regard to our own manipulations. In our anxiety for exactitude and celerity, we take no count of the judgment that determines the approach of shock, that is ever on the alert for the accidents of anæsthesia, and that forestalls these without any unnecessary fuss or distraction of our attention. Changes in the position of the patient, re-sterilisation of infected parts, as well as the hands of the operator and his assistants, are under anæsthesia easily effected. If we can thus complete the thorough sterilisation of the abdomen and vagina, immediately before operating, without distressing the patient, so can we finish the abdominal toilet, and carry out all its aseptic details, before she recovers consciousness. Also, as the success of an operation must depend in great measure upon our pre-knowledge of its nature and the probable steps that the peculiarities of the case will demand, our decision must be based upon an accurate diagnosis, which latter can only be arrived at in many instances by the assistance of an anæsthetic.

Here, in passing, I may remark with regard to anæsthetics, that the great majority of my operations have been performed under the administration of nitrous oxide gas and ether, and this includes the majority of the most serious and grave cases. Oxygen has been added in some, and was first given for me, both as a prophylactic and restorative, in combination with ether, by Dudley Buxton. Occasionally chloroform is chosen by the anæsthetist (and I never interfere with the administrator), but this is for some special reason, such as the age of the patient, lung complications, dislike on the part of the patient to ether, in some secondary operations, or where there is unpleasant abdominal movement under

the ether. In short, gas and ether during an operation have given me complete satisfaction. Only on the rarest occasions has there been shock, respiratory or heart complications, and sickness is not a frequent after consequence. I have had no single case of post-operative insanity arising directly from an anæsthetic in abdominal or pelvic surgery, as I have had in ophthalmic. At Schauta's clinic in Vienna there is an admirable mixture used of chloroform 1 part, ether petrolei 1 part, and sulphuric ether 2 parts. This is given freely on the ordinary chloroform cap. The most convenient form of the latter that I know of is that of Czerny, used in Doyen's clinic.*

The second basis on which our confidence is founded in carrying out to a successful issue the simplest as well as the most difficult procedure in operative gynæcology, is thorough asepsis, previous to, during, and subsequent to, the operation. In gynæcology it is a platitude to assert that sepsis and hæmorrhage are the two consequences most dreaded by the surgeon and most fatal to the patient. The latter is not infrequently the cause of the former, therefore no conceivable precaution can be omitted, no matter how superfluous it may appear, or to what extent it may interfere with the seeming brilliancy of an operation, without the unhappy reflection on the part of the operator, that, had he not overlooked or neglected it, he might have prevented a tedious convalescence, the result of avoidable complications, or, sadder still, the death of the patient.

I have said "the seeming brilliancy of an operation." Doyen has written much upon operating quickly and well, but he also says that "when we lose a patient who has been operated upon, the most common cause of death is infection within the operative tract;" and again, "Carefully study the causes of death, and question your memory on the minutest details;" and that to an interference out of all proportion to the vital resistance of the patient, or to infection alone, or still more frequently to both causes combined, the fatal issue may often be ascribed. Operating "quickly"

* This inhaler combines a graduated drop-bottle and cap. There is a small aperture in the latter. The entire appliance is very light, and is held by a handle.

may be mistaken by some for that most mischievous of methods, operating in a hurry. A man may operate in haste, but he should never be in a hurry. Deliberation and completeness are our aims, and in no branch of surgery does this apply with greater truth than to that we are discussing. What strikes one most in watching the operations of such men as Martin, Olshausen, Schauta, Hartmann, Chrobak, Terrier, and other equally successful gynæcologists, is the apparent indifference to everything save completeness. The speed of execution demonstrated by a cinematographic pictorial representation is very interesting to look at, especially if the effectual hæmostasis be completed by a lever forceps of 2000 to 4000 kilogrammes pressure; but *it is not to be imitated in practice, save by a very favoured few.**

In no detail of an operation is this shown more than in the securing of perfect hæmostasis, not merely in the immediate arrest by forci-pressure or ligature of the smallest bleeding vessel, but in preventive hæmostasis by the ligaturing of any pouting mouth of a vessel in a pedicle or elsewhere; by the extreme care with which pedicles are ligatured and divided; by the drawing out of and the direct ligaturing of larger vessels, such as the uterine, and the refusal to cover over any surface or area in which there is still oozing, until this has been completely checked, and the surface comparatively dry. Some surgeons are apt to say that pressure and compress will check what they term "mere oozing," but every now and then we are unfortunately made to regret such trustfulness by an unpleasant and unexpected post-operative or secondary loss of blood. Bleeding interferes with asepsis by the retention of coagula which are apt to lead to suppuration, and by the necessity of reopening a wound, possibly under disadvantageous circumstances or surroundings, and in the absence of efficient sterilisation of appliances. Therefore it is better to prolong an operation a little, and thus secure certainty in hæmostasis, than for the sake of rapidity to close a wound with any feeling of insecurity in our minds. The days of suckers, clamps, and

* See p. 7.

drainage tubes are practically over. Now and then, in exceptional cases, where forci-pressure or ligature fails, and where further delay may be serious, the placing on of a clamp and allowing it to remain is the only safeguard we can adopt. Otherwise, save as temporary aids during operation or occasionally as *dernier ressorts*, clamps no longer have a place in gynæcological technique. We thus get rid of another source of imperfect asepsis.

Complete cleansing of the entire operative tract, not only by hæmostasis, but, when necessary, by free sterilised saline irrigation, assisted by the careful removal of all fluid by sterilised sponges or gauze dabs, enables us to dispense with drainage in the great majority of cases, and when we do drain, the use of iodoform or other antiseptic gauze obviates the necessity for another potent source of failure in our aseptic technique, namely, the rubber or other form of drainage tube. Here, again, the prudent surgeon will sacrifice rapidity of operation to his satisfaction in providing preventive asepsis before proceeding to the abdominal or vaginal toilet. Thus, I think, most surgeons will agree with me, that while "to operate quickly and well" is an object we should all aim at, there are many operative procedures in which celerity is dearly purchased at the expense of a risk entailed by want of deliberation and completeness in the details of the technique.

As bearing on the question of hæmostasis in connection with aseptic technique, there is the important question of the hæmostatic method, which is the most certain at the same time that it is most aseptic. The electro-hæmostasis which was introduced by Skene of Brooklyn has, it is asserted for it, the special advantages that the tissues do not slough, that it produces occlusion of the lymphatics, and opposes an obstacle to the spread of infection, that it is clean and rapid in its action, permanent in its effects, and disinfectant, while there is less danger of inflammatory adhesions following its use. I have no personal experience of electrocausis, but Jacobs of Brussels has recorded a large number of cases successfully dealt with in this manner, and claim for it the advantages I have referred to.

Doyen's lever forceps have not, so far as I know, been used to any great extent in this country, though he and several others have reported most favourably of their efficacy. No doubt it is the most rapid means we possess of controlling hæmorrhage, but it has its dangers both as regards subsequent hæmorrhage, the sloughing of the bruised and crushed tissues, and the possible inclusion of the ureters between the blades. Doyen, indeed, does not trust to it alone, for he supplements its use by the application of ligatures. Still, it has the advantage of rapidity, which is of considerable moment in certain cases, and lessens the amount of anæsthetic employed by shortening the operation, a matter of no small importance. For my own part, I believe that the ideal hæmostatic in hysterectomy is the well-applied, thoroughly sterilised ligature, whether of catgut or silk. By it we obtain the greatest security against hæmorrhage, and the least likelihood of septic consequences. In certain cases clamps come in as adjuncts, and cannot be dispensed with, and are invaluable where there is an irregularly growing tumour in which we have broad ligament complications or adhesions to the visera, and in cases in which severe bleeding occurs from the tumour, or when rapidity of removal is a matter of exceptional importance. In vaginal hysterectomy also, especially where there are diseased conditions of the adnexa with adhesions, and in removal of the uterus for carcinoma, clamps are necessary; but in all these cases they are temporary adjuncts to the ligature, and only in very exceptional instances where there is some insuperable difficulty in controlling hæmorrhage by the ligature is a clamp now allowed to remain.

Here are three opinions with regard to this matter, which I quote from letters recently received. "No," says Howard Kelly, "I do not believe in the compress forceps. They are instruments of the middle ages, dangerous, and designed to meet a difficulty which does not exist." Professor Leopold Landau says: "I try to use angiotrypsie in every case of abdominal or vaginal hysterectomy, but in abdominal hysterectomy I invert the clamped stumps into the vagina, and, save where I make drainage, I sew the peritoneum

over them from the abdominal cavity." He does not use Doyen's clamp, but that of his assistant, Dr. Thumoni. In typical cases he trusts to it alone, but his use of clamps or ligature depends upon the case. He still performs his old vaginal operation, which I have seen him do so frequently in cases complicated with pelvic abscesses, or of uterine fibroids in which there is pelvic suppuration present, and it is the same technique which is described in his work, and in my own manual.* Professor Schauta, to whom I wrote asking if he had in any way changed his technique in hysterectomy, says: "You ask if I am pursuing a different technique in abdominal or vaginal hysterectomy to that which you saw me carry out in 1898. The technique is quite the same as when you were here. Clamps I never used." Both his sutures and ligatures are of silk. A. Martin's method is entirely by ligature. Edge of Wolverhampton has sent me an able *résumé* of the arguments which have been advanced in favour of the ligature over other means of hæmostasis in hysterectomy. Space prevents the use of it here, but the conclusions are practically those I have stated, and are endorsed by the practice of the majority of British surgeons.

Howard Kelly has recently modified his operation of myo-hysterectomy in consequence of certain special features of difficulty presented by a case of myoma. As this modification has a practical bearing on the question of hæmostasis, I give the particulars in his own words :—

"The first case in which I found it necessary to make a radical departure in the method of enucleation belonged to the group of cervical myomata. In this instance there was no cervix to be felt by the vagina, and on opening the abdomen, the bladder was found raised halfway up the umbilicus by an ovoid tumour choking the pelvis, with its long axis vertical. The body of the uterus containing a few small nodules sat high up in the abdomen above the umbilicus like a cap on top of this tumour, and on the right and on the left sides the displaced uterine and ovarian vessels were spread out like a network. I began the enucleation by trying to tie off these vessels whenever I could catch them on the left side. There was a great deal of hæmorrhage from the surface of the tumour, and as soon as I commenced to detach the ligated vessels and to push them down, the hæmorrhage increased. It was evident that the patient, who was already feeble and anæmic, could not survive the operation if there was to be any considerable additional loss of blood. I

* "Diseases of Women and Uterine Therapeutics," pp. 489, 580.

then at once resorted to the following plan, which promptly overcame the difficulty, and speedily terminated the operation without further loss of blood.

"I took two long-jawed pedicle forceps and controlled all the vessels on each side of the uterus on top of the tumour, by thrusting one of the open jaws of the forceps through the capsule of the tumour on one side at about the level of the round ligament from the front of the broad ligament, until the point appeared on the posterior surface of the tumour behind the broad ligament ; I then clamped the forceps powerfully down on the uterine and ovarian vessels, entirely controlling the circulation. Both sides were treated in this way.

"I then took a long-bladed knife, and grasping each uterine cornu with stout short-toothed museau forceps and pulling in opposite directions, I rapidly bisected the uterus, and cut on down into the tumour as far as the vesical peritoneum, which was then freed and pushed down, when the tumour was completely bisected.

"The next step was the enucleation of the left and the right halves of the tumour. Grasping the left half of the tumour at a convenient point, and pulling it away from its attachments with a pair of museau forceps, it was rapidly enucleated from its uterine bed by means of a blunt crenated spatula, which I always use in the enucleation of myomata. The right half was then enucleated in the same way. All these steps were carried out without a particle of hæmorrhage, in remarkable contrast to the alarming beginning of the operation."

What, then, are the most important essentials in obtaining an ideal gynæcological asepsis?* And first we have to answer the question, Is such an ideal perfection possible? I fear it is not, or at least that it can seldom be reached. This arises from a threefold cause. There is the impossibility, even by the most carefully carried out antisepsis, of entirely excluding germs from the skin wound and from the vagina, more particularly if in the latter there be any abraded surfaces, and that pathogenic organisms be present from uterine erosions and discharges, as well as in those septic states met with in many abdominal and pelvic operations from which infection may spread. Secondly, there are predisposing influences which may be entirely outside the power of any anticipatory or preventive measures to control. We have examples of this in the proneness to suppuration in certain individuals, due either to some condition of the tissues favourable to microbal growth, or to some special virulence

* In my larger work I enter thoroughly into the entire question of asepsis and antiseptics in the technique of abdominal and vaginal hysterectomy.

and toxic properties in the pyogenic organisms present, or in the toxic matters to which they give rise. Here we have to take into account lowered vitality and defective powers of resistance on the part of the individual and the tissues, lessening any ordinary protective influence against septic invasion. Lastly, there are the many avenues through which infection may be admitted by even the most careful of nurses, assistants, and surgeons,—through some defect in the preliminary precautions, the surrounding atmosphere, the appliances in the operating-room ; the instruments, some oversight or carelessness on the part of the nurse, surgeon, or assistants during the operation ; defective sterilisation of water, or through any source of infection that may be overlooked in the final toilet and dressing of the womb.

In view of so many means of admission of infection, it is obvious how difficult is the attempt to obtain such an ideal asepsis as will secure for us the absence of septic germs from a wound. The recognition of this difficulty is the first step in the education of both surgeon and nurse, and if this be true, under ordinary circumstances, how much greater must be the care taken and the precautions adopted, when either nurse or surgeon is brought in contact with any septic case within a given time before the operation. This involves on the part of both not merely preparation immediately before the operation takes place, whether in an ordinary room or operating theatre, but exceptional precautions in private in regard to the cleansing of the arms and hands, as well as the use of fresh underclothing and linen on the day of an operation.

It is not here necessary to refer in detail to the most certain methods of sterilisation, either of the hands and arms, or of instruments and appliances. These are sufficiently well known, and operators vary as to the antiseptics that they employ, and the mode of sterilisation of ligatures, whether of catgut, kangaroo tendon, horse hair, silkworm gut, or silk. I shall, however, have a few words to say generally on the plan I adopt. I prefer, in the first place, to draw attention to a few blots in what is not uncommonly regarded as an aseptic operation, and which are not infrequently ignored.

I will, for the sake of brevity, enumerate them categorically —(1) Defective sterilisation of the rectum and vagina for at least forty-eight hours prior to operating. In the instance of the rectum this is avoided by the use of saline aperients, a dose of calomel, and lavage of the rectum with 1 in 1000 of permanganate of potash in sterilised water, or a sterilised solution of boric acid, and of the vagina by thorough washing out with 1 in 1000 of formalin solution, lysol, traumatol, or perchloride of mercury, followed by the insertion of a tampon of sterilised iodoform or chinosol gauze. (2) The want of thorough cleansing of the entire body of the patient by the use of a warm bath, in which the skin is well scrubbed with lysol soap. (3) Defective shaving of the entire hair of the external genitals after the final bath has been taken, this being followed by proper packing of the abdomen with an antiseptic pad, such as 1 in 1000 of formalin. (4) Want of attention to the clothing of the patient when placed on the operating-table, as to its warmth and cleanliness, and omitting to see that the feet and legs are well enveloped in sterilised flannel bandages. (5) Inefficient sterilisation of the abdomen (especially of the umbilicus) or of the vagina—of the abdomen and umbilicus by a special washing when on the table with lysol soap and a brush, perchloride of mercury with alcohol, and finally ether ; the vagina I shall refer to again. (6) Inefficient sterilisation of the hands and arms of the surgeon, assistants, or nurses, or, subsequent to their sterilisation, the touching or handling of non-sterilised articles.

It is obviously ridiculous to see a surgeon who has prepared his hands making a resting-place for them on his hips, search in his waistcoat pockets for a knife or pencil, place them on the sides of a chair or stool, twirl his moustache, or use a pocket-handkerchief; but even worse acts of forgetfulness than these have been noticed and commented upon by those who have visited some of our operative theatres. Nothing should touch the sterilised hands or arms of any one engaged in an operation after the completion of their sterilisation. Though one who is experienced in the preparation of the hands may complete the sterilisation in a period of five minutes, much longer is required by the inexperienced

assistant or nurse. No one engaged directly in any gynæcological examination should have a projecting finger-nail. The nails require daily attention, and immediately before the operation, during the washing of the hands, they should be finally prepared with shears. Again, it is absurd to prepare the hands before having put on the operating overalls or aprons—otherwise it is impossible not to touch the ordinary wearing apparel. Finally, there should be free washing of the hands and arms in equal parts of absolute alcohol and perchloride of mercury solution, 1 in 1000, which is then washed off by a running stream of sterilised water as hot as it can comfortably be borne.

As yet it is difficult to get the thoroughly trained aseptic nurse. It is pitiable that women are still turned out from their probationary course of training in such absolute ignorance of what should be the most essential part of their education. It is no uncommon thing to find gynæcological trained nurses preparing for an operation or dressings with long sleeves and cuffs, handling promiscuously the clothes or coverings of a patient and dressings or appliances, with the crudest ideas of sterilisation and a happy but reckless disregard in the handling of antiseptic dressings; the mixing of non-sterilised with sterilised water, in the using of cans and taps; *in washing with nail-brushes that have been employed previously and indiscriminately in private houses, homes, or in hospital;* and with a startling indifference (in the post-operative dressing of cases) to the preparation of their hands and the possibility of conveying infection from septic cases that they may have at the time been attending to. The best nail-brush is that which is screwed on to the glass lid of the glass box in which it is contained. Worse still is their tendency to use the first towel or instrument that comes to hand, pleasantly oblivious as to its previous effective sterilisation.

(7) Failure may be consequent upon imperfectly sterilised sponges, gauze compresses, or dabs; or, even if these have been made sterile, by their being brought in contact with any source of infection, either through the hand of a nurse or assistant, or by careless re-use when they have been

infected. Ordinary sponges, save for exceptional purposes, are no longer used. The difficulty of keeping them sterilised, and the danger of trusting to nurses for their purity, have caused them to be generally abandoned. Gauze answers for almost every purpose, and soft white muslin squares or fine domett for protection of the bowel or for larger compresses. These and the sponges made of absorbent cotton-wool can be readily sterilised in the vapour steriliser or autoclave of Chamberland.

Additional security for the preparation of the larger compresses when the muslin is new, can be had by boiling them in a solution of permanganate of potash for about half an hour, after which they are treated with bisulphite of sodium in order to decolorise them. Two litres of 1 in 1000 permanganate solution are calculated for about 2 ozs. in weight of sponges. The latter are washed with sterilised water, after some hours' resting in the permanganate liquid, so as to free them from the precipitate of oxide of manganese. About 2 ozs. of a 10 per cent. solution of bisulphite of sodium in the 2 litres of water will be required to thoroughly decolorise the sponges, and 1 drm. of pure hydrochloric acid is added to the solution. They are then washed in boiling water, so as to remove every trace of sulphurous acid, when they are dried and sterilised in the Poupinel stove. They can then be kept either in a solution of carbolic acid or sublimate. If ordinary sponges be used, they should be prepared by the permanganate of potash method, followed by decolorisation with either oxalic acid or bisulphite of sodium, thorough washing with sterilised water, and retention until required for use in a 5 per cent. carbolic solution. It may be well always to have some such sponges at hand, more particularly the larger and flatter ones.

For all practical purposes in any private installation, the stove of Poupinel and the autoclave of Chamberland are sufficient for every purpose of sterilisation, whether of compresses, dressings, or instruments. The nickel jars in which these are sterilised, and sterilised towels wrung out of 5 per cent. of carbolic acid, enable us to carry our appliances any distance safely.

(8) Failure arising out of infected instruments is not likely to occur with any care, and if they be sterilised by means of a dry stove, and are of such a kind that they can have their blades and handles easily detached, so that the joints may be thoroughly subjected to the necessary heat. Danger more frequently arises from the use of instruments infected during

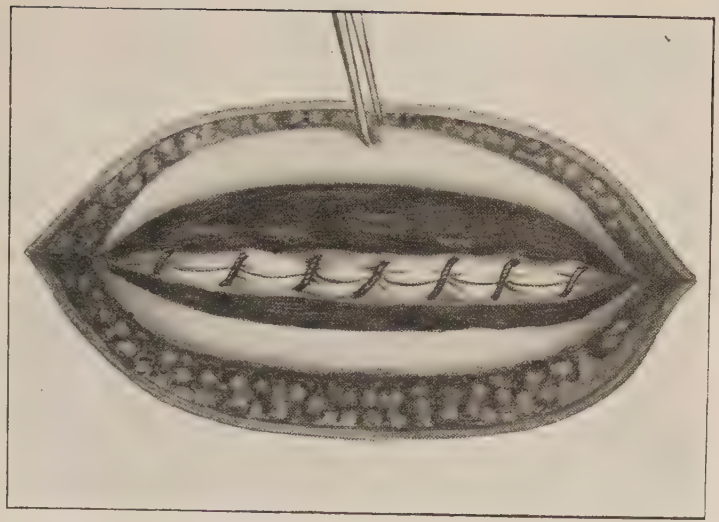
the operation, and which are not re-sterilised at the time. This is perhaps best obviated by having always at hand a nickel stove in which the water containing the sulphide of sodium is kept boiling, and into which the suspected instrument can be placed for some minutes before it is again used. This applies especially to needles which have been employed for suturing or ligaturing within the area of infected tissues. Hence the wisdom of having always prepared for any gynæcological operation a sufficient supply of all instruments that may possibly be called for, as, in emergency, imperfectly sterilised instruments may be used, or it may not be possible at the moment to re-sterilise an infected instrument. It is not necessary to comment on the re-use of any instrument or appliance which has once fallen from the hand of the operator.

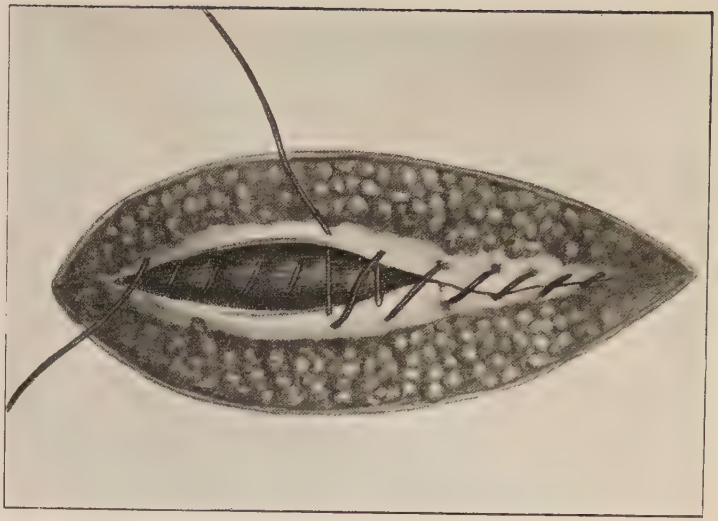
(9) While the position of Trendelenburg is invaluable in the majority of pelvic operations, it has its dangers with regard to asepsis, from the tendency for infective fluids to gravitate from the pelvic cavity to the bowel, and thus infect the latter. Therefore, in such cases, the large flat natural sponges come in of use in protecting the bowel, and the extreme Trendelenburg position should be avoided. Judicious irrigation, with sterilised saline solution, followed by careful drying of any cavity, and of the irrigated parts, with gauze tampons or sponges, is the best means that we can adopt. If there be a fear of post-operative hæmorrhage, the iodoform gauze compress of Mikulicz, pressed down into the dried cavity, affords us the greatest security.

No operation of any importance should be commenced without the sterilised needle for submammary injection of artificial serum being in readiness, together with the sterilised saline solution, so proportioned as to make with the addition of sterilised warm water the strength of 7 in 1000 at a temperature of 100°, to allow for cooling to 90°.

The plan I adopt, as a rule, of closing the abdominal wall is by triple suture; the peritoneum with fine silk, the fascia and muscle with stronger silk, and the skin with silkworm gut. I am most anxious about the careful co-adaptation of the fascia.* (Plate I.) Some prefer sterilised horse-hair

* See Appendix—Charles Noble's method.





ABDOMINAL TOILET. (Noble.)

FIG. 1.—Showing closure of peritoneum with continuous catgut suture ; the borders of the (divided) rectus muscle ; the left aponeurosis freed from the layer of fat ; the right aponeurosis separated from the rectus muscle and reflected.

FIG. 2.—Showing the wound in the rectus closed with continuous catgut suture ; closure of the aponeurosis by superimposing the right aponeurosis upon the left and suturing it with special form of continuous catgut suture. (See Appendix). [*To face p.* 14.

for the skin. This is the suture adopted by Doyen, and I dare say it is equally good. Many advocate the single suture, carefully applied, taking special care with regard to the muscle and fascia, but for many reasons I adhere to the plan I have mentioned.

(10) When an operation is completed, and the hæmostasis is assured, and drainage if necessary provided, there are still remaining some most dangerous loopholes for sources of infection. These are to be found in the abdominal or vaginal toilet. The use of infected needles, imperfect sterilisation of silk or catgut, as well as in the dressings of the wound, may furnish these; for instance, needles that have been used for suturing or ligaturing infected parts, or the handling of gut or silk, for neither should ever be handled after sterilisation, and should reach the wound only through sterilised forceps or scissors. In like manner the sterilised dressing for the wound, after the latter has been washed with 1 in 1000 of formalin, and dried, should be laid over it direct from the jar or bottle in which it has been sterilised or hermetically kept, and the same remark applies to the superficial sterilised wool covering. During any aseptic operation, there should be close at hand to the operator either a lavabo with tap with sterilised water, or a basin with antiseptic fluid, renewed from time to time, in which the hands can be rinsed; and after dealing with infected parts, or any combined operation when passing from the vagina to the abdomen, re-sterilisation of the hands should be practised before again proceeding with the operation. It is a good plan to dust the surface of the closed wound with dermatol, which is readily sterilisable, and is not irritating. I generally prefer, however, the washing of the surface of the skin with formalin, and then the application of the sterilised iodoform gauze.

With regard to the disputed question of drainage, it will be generally agreed that it is safer to drain in any of the following circumstances: (*a*) When pus has escaped into the peritoneal cavity. (*b*) When there has been considerable hæmorrhage difficult to arrest, and in which it has been necessary to use the aseptic tampon to restrain it, and when

there is the consequent danger of the formation of clots. (*c*) In the presence of septic complications, where there has been an escape of septic fluids, and, as is frequently the case in such instances, where extensive adhesions have necessitated prolonged stripping of tumours or sacs, with consequent more tedious manipulation. (*d*) Drainage is indicated in certain cases of enucleation of myomata—in pan-hysterectomy for myoma, when there is the complication of pus tubes, or suppurating cysts of the ovary; when there has been hæmato-salpinx or a blood cyst of the ovary or meso-salpinx which may have been ruptured; in pan-hysterectomy for cancer; in some cases of supravaginal hysterectomy, with complications similar to those just mentioned, and where we are in doubt as to the infectivity of the cervical stump and canal. Here the plan may be adopted of dividing the cervix, covering each separate pedicle with peritoneum, and passing the iodoform drain between the two; in sanguineous and suppurative ovarian cystomata; in colloid multilocular cystoma in which there is ascites present, and where there has been rupture of the cysts with escape of the contents into the peritoneal cavity.

(*e*) Drainage is necessary in colpotomy performed for pyo- or hydro-salpinx, hæmatocele, and other cases of ectopic gestation, and in suppurating cysts of the ovary, or meso-salpinx. (*f*) Drainage is indicated in vaginal operations and in cœliotomy, when there have been wounds of the bladder or bowel. Some may think that drainage is not necessary in a few of the conditions here mentioned, but I believe, with a view to asepsis, that temporary use of drainage under *all* these circumstances is better than the risk run by immediate closure of the wound. Sterilised iodoform gauze makes the best drain. If we do drain by means of a tube, it should be taken straight from the carbolic immersion fluid, having been previously treated by boiling in a 5 per cent. solution of permanganate of potash, decolorised by bisulphide of sodium, and afterwards boiled in distilled water.

The antiseptics that I use in abdominal and vaginal cases are carbolic acid, corrosive sublimate, formalin, iodoform, lysol, naphthol B, dermatol, and traumatol. The last-named I have tried recently.

It is asserted for traumatol that its antiseptic power is as strong as corrosive sublimate, and from experiments made comparatively with iodoform, upon cultivations of the *Staphylococcus aureus* by dusting these with the powder, the traumatol treated cultures were not liquefied before the eleventh day, whereas the iodoform ones were completely liquefied in forty-eight hours. The injection of guinea-pigs with traumatol has proved how innocuous it is as compared with iodoform, and similarly in the case of its internal administration. It is an iodocresylic acid, and contains 54·4 per cent. of iodine, in combination with cresylic acid. Its bactericidal action would appear to depend more upon the cresylic acid than on the iodine, as it contains much less iodine than the iodoform. It has not the disagreeable odour of iodoform, but rather an aromatic smell.

Corrosive sublimate I now only use for sterilisation of the hands, and the skin of the abdomen, or occasionally in sterilisation of the vagina. Formalin I use largely in the strength of 1 in 1000 for cleansing of the hands in post-operative dressings of wounds for the first few times, for vaginal douchings in the separation of sutures, and, when there are septic discharges, for the cleansing of sinuses (when I employ a strength of 1 per cent.). I also generally make it my first dressing after laparotomy, moistening the sterilised iodoform gauze in it. Formalin in vapour I avail of in the larger "Alformant" lamps for my operation-room and clothes cupboard. Drainage tubes are immersed in a solution of 1 per cent. before they are inserted. Glass catheters are always kept in formalin solution, two being used with every case in which catheterisation is necessary, one being taken fresh each time from the formalin solution. For ordinary douchings of the vagina I use lysol, and employ entirely lysol soap for washing purposes. Carbolic acid, save for keeping silk, drainage tubes, taps, douche pipes, and other appliances in, I never employ. The catgut is prepared by the method of Martin with corrosive sublimate, absolute alcohol, and oil of juniper, as I have fully described elsewhere. The gut which I use is kept in absolute alcohol (subsequent to complete sterilisation) for several months, before being taken out for an operation. The water used is first passed through a Chamberland filter and then boiled for half an hour.

The experiments of Ahlfeld, Reineicke, and Poten, confirmed by Fuerbringer and Freyhau, showed that the bactericidal properties of alcohol, in combination with corrosive

sublimate, are to be ascribed to the removal of the fat of the skin of the hand, while its power of uniting with water renders disinfection of the tissues easy by the associated sublimate or its subsequent solution, at the same time that the squamous epithelium and the superficial impurities as well as the bacilli are removed. The arms should be washed with the mercuric and alcohol solution and the hands *immersed in it* for some two minutes before their sterilisation is complete.

In speaking of sepsis, an accident which may lead to complications easily mistaken as having their origin in septicæmic inflammation, is the possibility of a foreign body being left in the abdominal cavity. Without specifying names, it is sufficient to say that the very best surgeons have unfortunately either fallen into this error themselves, or have been the victims of oversight or carelessness on the part of others. The plea has been urged that such an accident must be taken by a patient as one of the unavoidable risks of operation. Various rules have been laid down by different operators with regard to the precautions necessary to be taken so as to avoid such a calamity. At least in any abdominal operation in which it is possible to occur, the following rules should be observed: (1) Two persons should count and verify the number of pieces of gauze or sponge which are available for use. (2) This number should be written down, and the assistant should be made aware of it at the time (3) No gauze, dab, or compress should be packed away in the abdominal cavity which has not attached to it a piece of tape or strong silk which is secured by forceps, and no large compress or piece of protective muslin should be pushed into the abdominal cavity without a forceps clasping its end. (4) All small pieces of gauze or dabs should be introduced on long slender clasp forceps. Sponges or gauze should not be torn during an operation. (5) No one should touch any discarded piece of gauze or sponge which may be thrown on the ground or into a receptacle. (6) The verification of the number of pieces of sponges, gauze, or compresses used should be made before the closing of any part of the abdominal wound. (I am indebted to Boldt and Howard Kelly for the emphasis they lay on some of these precautions.)

One word I may add on two matters—sterilisation of the vagina and the advantage of thorough antisepsis in the operation of curettage before vaginal and uterine operation, such as vaginal fixation, ventro fixation (or suspension), or colporrhaphy. With regard to the vagina, after careful washing of the external genitals with Holzwolle sponge (Waschel) and antiseptic soap, which is continued with alternate douching for a few minutes, the vaginal walls internally are well lathered with the same and washed with repeated douchings. This is done with the sterilised hand of the nurse. The uterine neck is now seized with tenacula, and drawn well down. Martin's curette is next used to the uterine canal, which is then douched out with the antiseptic solution, iodine, lysol, or other, as may be selected, or it is mopped out with a 20-gr. to the ounce solution of chromic acid. The vagina and cervix are thus sterilised. After sterilisation of the cervical canal, it is the practice of some gynæcologists to amputate the lower portion of the cervix, and then suture the divided lips together. Others prefer the use of Paquelin's or the porcelain galvano-cautery

With regard to curettage for diseased states of the endometrium, its object, it must be remembered, is to obtain a new endometrium. It is not a step taken merely for the superficial "scraping" of the affected mucous membrane, and therefore if we want to secure permanent benefit from the operation, it has to be done thoroughly. After many hundreds of curetting operations, I have had only one subsequent trouble, and then in a case already curetted, and in which there was adnexal disease. Though every aseptic precaution was followed, pelvic abscess occurred at the left side, for which the abdomen was opened, the abscess was washed out, and drainage employed. The patient recovered. Still, deaths have occurred even in the best hands after the use of the curette, and therefore we cannot be too particular in regard to our aseptic precautions. The plan I adopt is as follows:—Should it be a case requiring previous dilatation, the vagina is thoroughly prepared the day before, and the vulva shaved. The uterus having been fixed, a laminaria tent of the selected size, 4 ins. in length (or two smaller ones if needful), is taken direct from the saturated

solution of iodoform and ether in which it has been kept, washed in absolute alcohol, and then passed into the uterus, the vagina being tamponned with antiseptic gauze. The patient that night is given a full dose of bromide of potassium. The following day the tents are removed, the vagina is thoroughly sterilised; sufficient dilatation is secured by the rapid passage of uterine dilators; the uterine cavity is washed out with lysol solution, and then freely curetted with Martin's and the larger fenestrated sharp curette. The cervix, should it require it, is more vigorously dealt with, and the eroded tissues removed. A stream of antiseptic fluid is now allowed to run through the uterine cavity, which is next dried by the introduction with a long curved forceps of successive strips of dry sterilised gauze. It is finally wiped out, according to circumstances, with a chromic acid solution of from 30 grs. to a drm. to the oz. The external cervix, should it be eroded, is now touched with nitric acid. A strip of iodoform gauze is carried into the cervical canal, and the vagina tamponned with the same. The gauze is not removed for forty-eight hours, after which the dressing is renewed at intervals, and after the first week the vagina is antiseptically douched daily.

Should aspiration by the vagina be determined upon for any reason, either diagnostic or therapeutic, the vagina is prepared with the same care as in any more serious procedure, a useful aseptic branch dilator and trocar being that of Landau (a somewhat similar instrument was devised by Christopher Martin), which is easily sterilised. The trocar and cannula having determined the presence of fluid, the branched dilator is pushed forwards, and thus the opening is enlarged sufficiently for irrigation or drainage.

In conclusion, I may say that, all through life, I have been following as conscientiously as I could Listerian methods. I commenced when very young, in my early twenties, in the days of shellac and carbolic putty. I followed the spray through its various phases of development until it was finally abandoned. I can remember the horror and astonishment of colleagues when I first put up antiseptically and hermetically a bad compound luxation wound of the ankle-joint received from a reaping-machine, and having sawn off a portion of the

malleus did not inspect it for several days. I can recall my first amputations and resections performed with those more primitive antiseptic methods. It is over thirty years since I published a case of "removal of retained placenta with hour-glass contraction of the uterus," where a decomposing syphilitic fœtus had been delivered by a midwife, and in which I had to bring away a putrefying placenta bit by bit, then washing out the uterine cavity with a strong permanganate of potash solution. For some eighteen years I was largely engaged in midwifery practice, both in public, "poor law," and maternity work. My first ovariotomy operation was performed over twenty years ago, and since then I have been mixed up more or less with gynæcological surgery. The result of all this experience is, that I have never had in my practice any case of death from sepsis in general surgery. I lost two cases in childbed from septicæmia; in one instance the infection being directly brought by a midwife who came straight from attendance on a septicæmic case that had died; the other, a forceps case, to which I was called when the child was dead, and the woman had been in the hands of a midwife for some days, and with the worst of surroundings. I have had three fatal cases in abdominal surgery arising from septicæmia. One died from infection of the peritoneum. It was a case of ascites arising from rupture of a multilocular colloid ovarian cystoma, some of the contents of which had escaped into the peritoneal cavity before operation. The second died from septicæmic peritonitis, arising in the tract of the abdominal wound after hysterectomy for myoma, and I have not the least doubt this was brought about by some oversight in my aseptic technique. The third occurred recently from infection of the abdominal wound by a putrid ectopic gestation sac. The first death took place many years since, and were I dealing with a similar case now I do not think I should lose it. I have not as yet lost any vaginal case. For the past seventeen years my operative work has been done in private, but it has included a very large number of the most serious procedures in operative gynæcology. From a consideration of these facts, I trust that I shall not be regarded as fanatical in my advocacy of a perfect aseptic method.

CHAPTER II

SOME PITFALLS IN GYNÆCOLOGICAL DIAGNOSIS

THERE are three attitudes the physician or surgeon may assume in coming to a conclusion with regard to the nature, probable course, and final result, in any given case in which his opinion is invited. He may feel himself certain of his ground, and assured of his certainty. He may clearly recognise the absence of signs, either positive or negative,—a recognition which brings home to him the difficulty of an assured diagnosis. Or an overweening confidence in his diagnostic infallibility may be due to the simple fact that he is unconscious of his ignorance. In other words, it is another reading of the old classification of those who "know that they know," those who "know that they do not know," and that most hopeless of all classes, those "who do not know that they do not know!"

It is doubtless most pleasant and most flattering to our sense of diagnostic acumen, to feel ourselves amongst the first of these divisions, yet unfortunately the sources of error in the novel and shifting character of the clinical features, subjective and objective, of each fresh case that presents itself to our notice, are such as very frequently to make it a new and complex study. The most dangerous diagnostician is he whose faith in his own experience prompts him to believe that he is more likely to be right than to be wrong. Hence he approaches a case with a prejudgment and bias, derived from impressions which colour and influence the deductions he draws from the clinical peculiarities now presented to him.

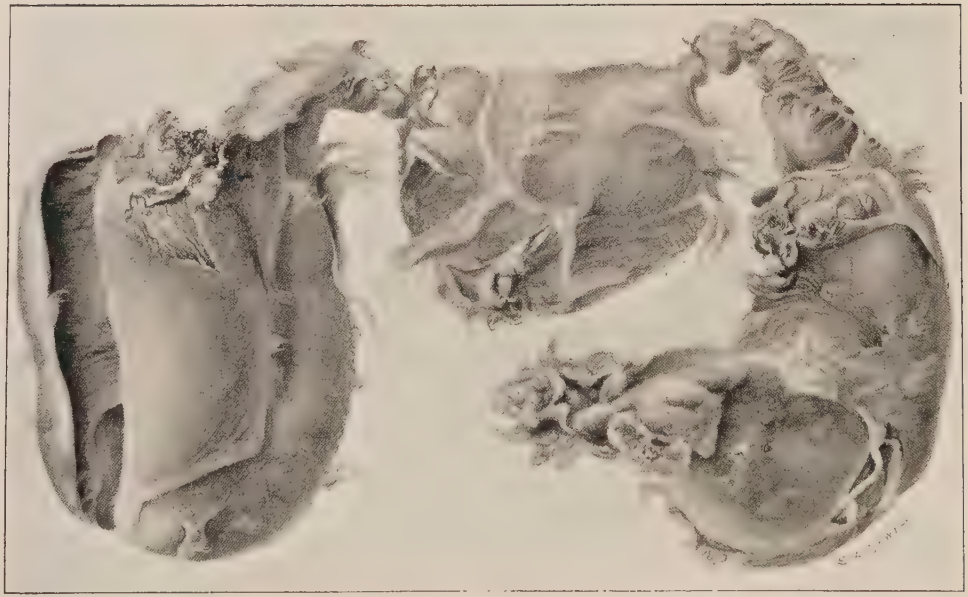
He is consequently apt to overlook the unlikely sources of error, and does not proceed by a careful process of exclusion to satisfy himself that these are absent, his so-called "experience" thus leading him into the trap which is always open for the self-confident and dogmatic. Of course there is a fair proportion of cases in which the clinical and pathological characteristics are so allied, and the complications so few or comparatively unimportant, as to enable us with sufficient accuracy to arrive at a quick conclusion. These do not, however, come under the class that we are considering, and it is not in the instance of such that we have to be watchful of our impressions and suspicious of our deductions. Therefore, in the diagnosis of obscure abdominal and pelvic conditions, he is most likely to be right who finds himself amongst that class which is conscious of its fallibility.

In pelvic and abdominal surgery we have not only to satisfy ourselves as to the presence of some gross lesion in any particular organ, but we must also predetermine before operation, if such be decided upon, the nature and extent of those complications that may seriously affect or impede it. This involves not merely those associated conditions or actual connections which locally affect the diseased organ, but such constitutional states, diatheses, or diseases of other organs as may influence our opinion.

There is a large class of cases which appeals to gynæcologists for relief, in which the principal, if not the sole, trouble is a train of subjective symptoms. The physical signs which are indicative of deviation from the normal state of the pelvic viscera may be slight, inappreciable, or altogether absent; and, associated with this want of any evidence of a pelvic lesion, the presence of visceral neuroses, or reflected morbid phenomena, occurring in such organs as the brain, eye, ear, throat and larynx, or the cranial nerves, may lead us to conclude that the origin of the mischief is not seated in the sexual organs. Doubtless such a conclusion is often due to an incomplete examination. On the other hand, it is not infrequently to be attributed to the erroneous conviction that because we are unable to detect gross lesions in the generative organs, the cause of the symptoms, either remote

and reflected, or local and actual, do not lie in them. Many years since, I knew of a case in which, in my presence, the late Lawson Tait removed the adnexa from a lady æt. 32, who occupied an exalted position in society, who for eighteen years had suffered much, not only from her pelvic organs, but at the hands of many gynæcologists, including myself. For, at the eleventh hour, I had divided the cervix and enlarged the uterine canal, and subjected her to a prolonged course of high tension faradisation, without any benefit. Every internal and external prop had been tried, and the gynæcological therapeutics of the day exhausted. The patient was still the victim of aggravated dysmenorrhœa, severe hæmorrhage, and the increasing use of morphia. I advised removal of the adnexa, but as this had been before discountenanced by many leading obstetricians, it was considered right that a consultation should be held previous to the operation. Consequently, a distinguished obstetrician saw her, and decided that there was no disease of the adnexa present sufficient to warrant surgical interference, and that there was "*no alternative but to leave her as she was.*" Mr. Tait, seeing her subsequently on the same day, with the other opinion before him, decided that it was a case for immediate surgical interference, which view was acted upon, and, under the circumstances, at my request, he operated, with the result that a complete cure was effected, which has lasted to the present day. The lady has been married for some time, and enjoys perfect health. Macroscopically, the ovaries were covered with minute follicular enlargements, and on section appeared rather hard and cirrhotic. The Fallopian tubes were healthy.

It is frequently in such cases of chronic ovaritis, in which there is so-called sclerosis of the capsule, and interstitial fibrous formation in the stroma of the ovary, leading rather to its contraction and atrophy than to hypertrophy, that we find the most severe pain present. In many instances the antecedent ovaritis has led to necrosis, with consequent multiple abscesses, and long before the fusion of such may lead to a pus cyst, the pain resulting from the suppurative ovaritis must be intense. It is not necessary that there need



DOUBLE PYO-SALPINX.

Salpingo-oophoro-supra-vaginal hysterectomy—showing the pus tubes and large ovarian sacs—the left was ruptured in removal, the right was removed without rupture. The uterus and ovaries were embedded in a dense and hard infiltration filling the pelvis. The patient made an excellent and permanent recovery. (Author.) [*To face p.* 25.

(Case reported in "Diseases of Women," 8th Edition.)

be any tangible enlargement of an ovary, in which follicular degeneration, associated with thickening of the albuginea and recurrent localised attacks of peritonitis, have occurred; and, save by tenderness on palpation through the vagina, and getting the ovary between the fingers in the bimanual method, digital exploration reveals nothing very abnormal. Yet it is often in such instances that dyspareunia, erratic pelvic pains, neuralgia, difficulty in walking, with that heterogeneous group of symptoms to which we give the name of "neurotic" or "hysterical" occur. In the early stages of hæmatocystic, hydrocystic, and colloid degeneration of the ovary, there may be little enlargement, and yet excessive pain. The point I wish to emphasise is, that pain, in affections of the adnexa, as of the uterus, is a symptom which is most deceptive, both in diagnosis and prognosis. Certainly some of those who have had the most acute ovarian suffering that I have known, have had the least pathological change in the ovaries and tubes, either discoverable before or ascertained after this removal. The knowledge of this fact does not influence our judgment in testing the relative importance of the sensibility to pain, or the tendency to either exaggerate or minimise it, which we so often find in women of the neurasthenic type on the one hand, or the self-repressive on the other. Contrast such pain as that to which I have referred in the case I have mentioned, with the statement of a patient, an apparently robust woman in all other respects, from whom the pus tubes and sacs shown in Plate II. were removed.* Her only complaint was incontinence of urine, for which she had consulted a surgeon, who, finding pelvic evidences of pressure on the bladder, sent her to me. When she came, the distended bladder reached to the umbilicus, and I drew from it 5 pints of urine. The enlarged uterus was pushed out of the pelvis, which was filled by a hard and unyielding mass,—so hard, that my first impression, fortified by the history of the case, was that I was dealing with a uterine fibroma, nor was it until after some days' observation that I determined that it was a huge infiltration which filled the pelvis and surrounded the uterus. The kidneys in this case secreted, before operation,

* *Trans. Obst. Soc. London*, 1897, p. 319.

from 8 to 9 pints of urine in the twenty-four hours. The uterus and ovaries were found imbedded in the old exudation, a mass of adhesions binding everywhere together the uterus, tubes, and ovaries (Plate II.). She is a perfectly sound and healthy woman to-day, three years after her operation. Such a case as this is illustrative, not only of the extent to which disease may proceed in a woman without causing, as she repeatedly assured me, "any pain whatever to speak of," but it is an exemplification of a condition of things often most difficult to differentiate and decide upon.

In cases of old hard infiltrations, in which there may be enlargement of the uterus, with or without myomatous changes, and where the entire mass is fixed by adhesions and inseparable from the uterus, diagnosis is most difficult; and I have myself been deceived in another case of a somewhat similar nature to the above, believing that I was really dealing with a fibromatous uterus.

Recurring to my reference to subjective and reflected phenomena, arising out of disease of the generative organs, one cannot help feeling that a danger arises to all of us from the habit of concentration of attention on these, as thus we are prone to overlook or to minimise symptoms the presence of which necessitates careful examination of other viscera and organs. This applies whether we are or are not able to discover some morbid condition in the pelvis. The mischief which has been wrought by a neglected retroversion, a protracted endometritis with a deep and increasing erosion, or some progressive ovarian degeneration, is not necessarily removed because we readjust the uterus, cure the uterine lesions, remove or resect the ovary. And we may have to determine how far a retinal lesion, a unilateral exophthalmos, oculo-motor disturbance, disorder of innervation, or ocular neuralgia, may be attendant upon, or the consequence of, such pelvic conditions. The same remark applies to cranial neuralgias, various forms of migraine, paretic and hysterical aphonia, tinnitus aurium, and many other reflex neuroses, associated or not with physical changes in the organs affected.

Nor, indeed, do these observations bear on the effects due to affections of the pelvic viscera alone. We need only refer

to the number of direct and reflected disturbances which a movable and enlarged kidney will excite, to realise how we are inclined to seek elsewhere for the cause of symptoms which at first sight appear to have but little connection with an unsuspected organ. Indeed, in regard to movable kidney, it is the first suspicious factor that, in examination of the abdomen for any abdomino-pelvic affection, we should look for. Its occurrence is so frequent, the variety of effect following its presence so great, and the serious nature of the renal changes often found associated with it so considerable, that any chance of its being overlooked should be a first consideration. This becomes the more necessary when we reflect that it is not uncommon in those cases in which there has been a general falling off in health, and reduction in fat due to disease of the pelvic viscera, when such loss of support brings about the mobility of the kidney. I have just performed nephrorrhaphy in a case in which a short time since the adnexa were removed. I have fully recorded the particulars of a case in which metritic changes and endometritis complicated the presence of a large movable kidney, where the persistent elevation of temperature could not be accounted for, inasmuch as the uterine conditions were relieved, and yet the hyperpyrexia remained.* The operation of nephrectomy disclosed a carcinomatous kidney, and the nightly pyrexial range appears to have been due to the inflammatory changes occurring in or around the capsule. There were no indications of any purulent deposits anywhere.† It is equally unfortunate to overlook some affection of the uterine organs, having discovered the renal displacement, as it is to fall into the opposite error. I recently saw a patient, sent to me suffering from an enlarged and retroverted uterus, in whom I found a freely movable kidney, to which, as much as to her retroversion, I attributed her general symptoms.

We must not forget, however, that we are liable to mistake other tumours or swellings for mobile kidneys. Thornton

* *Brit. Gynæc. Journ.*, August, 1897.

† The history of this case, with plates illustrating the macroscopical and microscopical appearances of the growth, is in the eighth edition of my "Diseases of Women." The patient completely recovered from the operation, growing fat and robust. The disease recurred in the parietes, and she died a year afterwards.

and Greig Smith pointed out the difficulty of diagnosis which might arise in certain cases of distended gall bladder and pyloric tumour. I have mistaken, in the first instance, a hard accumulation in the hepatic flexure of the colon for the renal displacement, and we know that a wandering kidney, which may have been at the same time enlarged and fluctuating, has been mistaken for ovarian cystoma, pedunculated fibroid, hydrosalpinx and pyosalpinx.

Case of Complete Hepatoptosis.

In one case of mine, the supposed enlarged kidney, the edge of which could be felt closely simulating the margin of the spleen rather than that of the kidney, proved to be a completely displaced liver (hepatoptosis).* The patient, who had some time before been almost *in extremis* from hæmatemesis, had been treated for gastritis and gastric ulcer. On abdominal exploration, I found the liver lying completely at the right side, the gall bladder displaced from its position, the free margin of the liver lying forwards, the organ being healthy, but congested, and reaching to the right inguinal region. The abdominal viscera being carefully examined, and the liver replaced in its position, the abdomen was closed, with the curious but pleasing result that since the operation the patient has been in excellent health.

Suppression of Urine following Shock—Displaced Liver simulating Hydro-nephrosis.

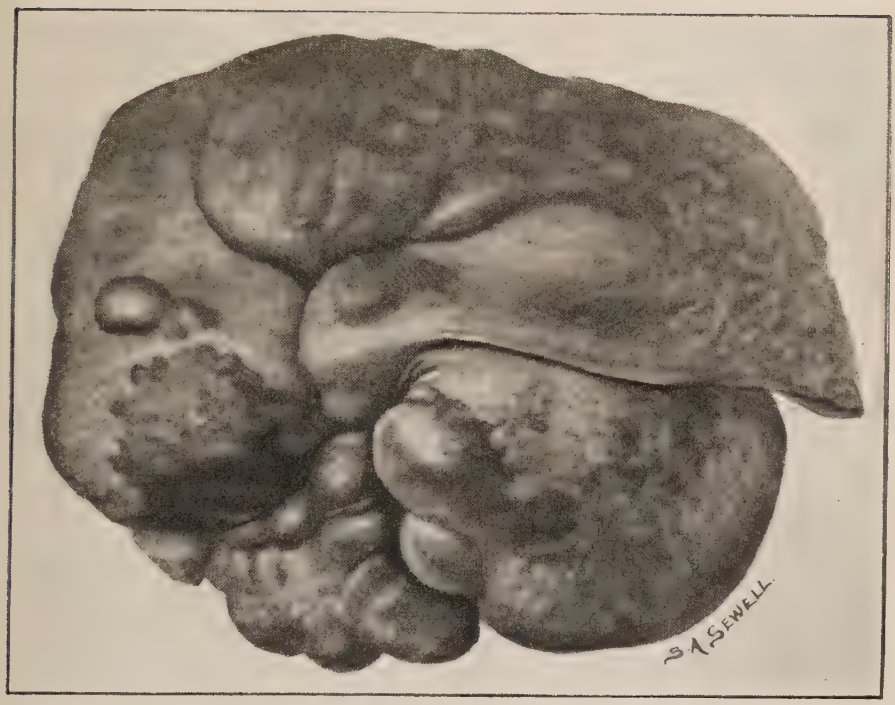
Shortly after this was written I saw a case of suppression of urine which lasted for eight days. A large bossy swelling at the right side I thought was a hydro-nephritic accumulation. The suppression had followed removal of a large uterine polypus by means of forceps. No urine passing, and there being no cause for any obstruction in the ureters, I was puzzled to account for the hydro-nephrosis. Everything having been done to promote the secretion of urine, and the swelling at the right side becoming larger, and aspiration having failed to draw any fluid from it, I advised exploration, and, on opening the abdomen, I found that the tumour was a completely displaced liver, the lower border of which reached to the groin. The kidney behind it was quite healthy. The woman died from the suppression.

Angioma of the Liver simulating Movable Kidney.

A young married woman, æt. 28, was sent to me suffering from retroversion of the uterus and an abdominal tumour occupying the right hypochondrium and lumbar region. It was freely movable, and could be

* *Trans. Med. Soc. London*, 1898, vol. xxi.

PLATE III.



Angioma of liver, simulating large movable kidney.

[*To face p.* 28.

apparently isolated from the liver. It was, even under anæsthesia, most difficult to say whether it was a tumour of the liver or an enlarged and mobile right kidney. Determining, however, that it was a tumour of the liver, I opened the abdomen with a Langenbuch's incision, coming down on a large bossy tumour about the size of a small cocoanut, growing from the under surface of the right lobe, the margin of which projected over part of it, and pushing the gall bladder towards the left. By passing, with Deschamp's needles, strong ligatures through its base so as to isolate it, and then ligaturing the tumour in sections as it was divided, finally clamping the pedicle until it was completely secured, I removed it with comparatively little loss of blood, packing the pedicle above and below with iodoform gauze. The patient had suffered a good deal from the time the tumour was first discovered eighteen months previously, and was consequently in a low state of health when I operated. She suffered considerably from shock, and though she rallied a few times from the collapse, she never quite recovered, and, notwithstanding repeated use of artificial serum, strychnine subcutaneously, and stimulating enemata, she survived only twenty-two hours from the completion of the operation. The tumour was examined by Mr. Targett, who assisted me at the operation, and proved to be an angioma of the liver (Plate III.).

Report by J. H. Targett on the hepatic tumour (Plate IV.)—

"The specimen consists of a lobulated tumour, somewhat cubical in shape, and measures $3\frac{1}{4}$ ins. × 3 ins. × $2\frac{1}{4}$ ins. It is situated in the free margin of the liver immediately to the right of the gall-bladder, and projects more on the deep than the convex surface of the liver. Superiorly the specimen shows some deep fissures from lateral pressure, and the yellow hepatic substance is mottled with extensive areas of dark brown growth. Inferiorly the tumour has a coarsely nodular outline, and the surface is similarly mottled with yellow and dark brown patches. On section the tumour has a spongy structure; its outline is distinct in consequence of its colour, and areas of unabsorbed hepatic tissue are visible at the periphery of the neoplasm. Histologically the growth is an angioma of the liver, and there is no evidence of malignant disease in it. Its structure consists of irregular spaces lined with endothelium, and separated by strands of soft nucleated fibrous tissue, in which no traces of unstriped muscle can be found. Some of the larger spaces contain thrombi in process of organisation. The older parts of the fibrous stroma are becoming hyaline and denucleated, while in the advancing margin the capillary vessels are very numerous, and the stroma is scanty."

Choleccystotomy for Empyema of the Gall-bladder after Typhoid Fever, complicating Movable Kidney.

Not long since I performed choleccystotomy under the following circumstances:—A lady who was attacked with typhoid fever in India, and recovered under the care of Professor Charles, after violent hæmorrhage and undoubted perforation of the bowel, came to England, and suffered

from periodical attacks of most violent abdominal pain, principally at the right side. Various opinions were given as to its source, some considering the attacks to be due to peritoneal stretching from adhesions, others to localised peritonitis, while some thought that there was evidence of gall-stones, and, unfortunately for her, her symptoms were attributed also to neurosis and neurasthenia. Every form of sedative failed to relieve her, until at last she lost sleep, the stomach refused food, she became emaciated, and, at my first interview, had practically taken nothing but water for several days. An experienced anæsthetist administered chloroform for purposes of diagnosis. She had a narrow escape from the effects of the chloroform. I found no evidence of any disease in her pelvic organs, there was a loose right kidney, somewhat enlarged, and I could detect some resistance with hardness in the region of the gall-bladder. Before any operative measures were carried out, inasmuch as these would at that time be certain to have proved fatal, I advised that she should have a period of prolonged rest, in short, a carefully conducted Weir-Mitchell course preparatory to operation. At the end of six weeks she had put on flesh, the kidney was much less movable, and the attacks of pain had nearly disappeared. Suddenly there was a violent recurrence of the pain, with sickness, exactly of the same nature as that from which she had suffered before I saw her. I again anæsthetised her, examining her carefully in conjunction with Mr. Bland-Sutton, and as it was evident that the symptoms could not be due to the kidney alone, I resolved to explore the abdomen by a Langenbuch's incision, dealing with the kidney if necessary, and at the same time examining the gall-bladder. On doing so, the latter was found surrounded by adhesions, greatly thickened, and containing pus, with a widely dilated duct, in short, a typical case of empyema. The duct was carefully explored through the bowel, the gall-bladder thoroughly cleansed and wiped out with 1 in 1000 of formalin, the walls attached to the peritoneum, and both to the parieties, an iodoform gauze drain being used. The patient made a perfect recovery from the operation, but there remained a small fistulous canal through which mucus escaped. As she was most anxious to return to her home in Australia, and was not fit for a second operation, I permitted her to do so, and I have since heard of her great improvement in health there, where she is about to have the fistulous opening closed.

That renal cystic tumours, hydronephritic and pyonephritic enlargements, have often been mistaken for ovarian tumours, or solid tumours of the ovary, is well known. One such case I have seen in which a large perinephritic abscess was thought to be an ovarian cyst. Aspiration in the renal region decided its nature. In speaking of genito-urinary complications, perhaps the most difficult of all that the gynæcologist has to differentiate are those in which he has to decide if the genito-urinary symptoms and signs be caused

by coexisting adnexal disease, involving either the ureters or bladder, or have arisen independently of these. Fortunately the occasions are rare in which suppurating adnexal tumours, tubercular or other, involve the ureters, but such a complication has to be borne in mind. The absence of any evidence of renal enlargement or disease by palpation, the presence of pus in the urine, and the coexistence of an adnexal tumour, will help us to a decision. Remembering the possibility of tuberculous infection passing thus to the ureter and bladder, indicates the importance of an early bacteriological examination in these cases. It is in this class of affection that Howard Kelly's or Kölliker's methods of exploration of the bladder, ureters, and kidney, by direct inspection and catheterisation, are of such great value.

There are two conditions that may complicate the presence of an abdominal tumour, and which considerably increase the difficulty of diagnosis,—the presence of ascites and pregnancy. There are few with any experience in abdominal and pelvic surgery who have not realised this. I recollect my second case of ovariotomy, in which there was considerable difference of opinion amongst my colleagues as to the presence of an ovarian tumour, but no doubt as to that of ascites. The abdomen was greatly distended with the ascitic fluid, and I was able to disassociate the uterus, which was of natural size, in a nullipara, æt. 20. I had the fluid examined at the time, and some of Drysdale's granular cells were detected. After careful examination, from the negative evidence, in the absence of all signs of organic disease, and the history of the case, together with a careful physical examination, I came to the conclusion that it was ovarian cystoma. On making the preliminary incision, I was disagreeably surprised to find that it was a large quantity of ascitic fluid that escaped from the peritoneal cavity which I had opened. Turning the patient on her side, I drained off the fluid, and was relieved by the discovery of a large polycystic colloid ovarian cystoma, which had ruptured in several places, and had evidently caused the ascites. But my experience was a very unpleasant one before I discovered the tumour.

Ovarian Cysto-Sarcoma simulating Myoma.

Quite recently I showed at the Gynæcological Society an ovarian cysto-sarcoma, which I had diagnosed as a myoma of the uterus. The patient consulted me at the latter end of 1899, being sent to me for a myomatous tumour requiring operation. Examination revealed a hard mass filling the pelvis, the uterine cervix being felt above and to the left side, and giving the usual feeling found with myoma. I did not at the time, by bimanual examination, detect any fluid. Not seeing her again until she was on the table for operation, some three months subsequently, I was surprised to find, when she was under the anæsthetic, that there was evidently fluid in the peritoneum, and also that I could detect fluctuation in the upper part of the tumour. I then thought I had to deal with a large fibrocyst of the uterus, and that there was some accompanying ascites. The tumour proved to be a cysto-sarcoma of the ovary, the solid portion completely filling the pelvis, and the upper part enlarged, which had, as reported by Mr. Targett, who examined the specimen, softened into a cyst with fluid contents. The patient made an excellent recovery, and so far has done well (see Plate V.).*

Many years have passed since I saw in a Metropolitan hospital, when ovariotomy attracted more spectators than it has done of late years, an operation commenced for ovarian cystoma, and interrupted because it was not possible to proceed with a large hydatid cyst of the liver. And in connection with this reminiscence, I recall a case in which a large semi-solid, multilocular, ovarian cystoma filling the abdomen, the solid upper portion of which could not be dissociated from the spleen and liver, caused me considerable anxiety both in diagnosis and operation. In a case in which a rather magical cure was attributed to me, a difference of opinion between a distinguished general physician and obstetrician had occurred as to the nature of an abdominal swelling. The one considered it to be ovarian, and the other ascitic. As a consequence, tapping was recommended. This was carried out, and again the fluid accumulated. On seeing the patient, I came to the conclusion that the tumour was not ovarian, and advised that the fluid should be again drawn off, and at the time a careful abdominal exploration made. This was done, and I saw the case the following day. On examination, I found a rather hard mass in the neighbourhood of the lobus Spigelii. I determined to explore

* See also Chap. VI.

CYSTO-SARCOMA OF THE LEFT OVARY.

The sarcomatous growth filled the pelvis, pushing the uterus out of it to the right. When seen and diagnosed as myoma of the uterus, the degeneration converting a portion of the tumour into a cyst had not occurred; ascites followed. The cyst was tapped and the mass removed. Recovery has been complete, and so far permanent. (Author.)

[*To face p.* 32.

this, and, after making a small incision over its site, I passed a rather large-sized aspirating needle well into the mass, so as to test its nature. Nothing returned save blood, and I was afraid that the growth would prove to be malignant. The result of the experiment was, that this mass shrank, there was no recurrence of effusion, the lady married, and has children.

I have referred to pregnancy. The many obstetric complications that may arise during its course, and which may or may not be detected before parturition, are familiar enough to us all. Yet, realising this as we do, we are still liable to overlook them, and to experience considerable difficulty in differentiating and isolating them. It may seem impossible that a modern gynæcologist should mistake a myomatous for a pregnant uterus, yet few of us, I think, but know cases in which this error has been fallen into, and that by men who have had no inconsiderable work among such tumours. Of course it is in those cases in which the myoma complicates pregnancy that an error is most liable to be made, and this oversight may occur at any stage of the pregnancy, whether in the earlier months, when we may be confronted with small interstitial myomata in the lower zone of the uterus, or later on, should miscarriage not occur, when the myoma has increased in size with the pregnant uterus, and is situated in the upper or middle zone of the fundus. Small intramural myomata, when complicating early pregnancy, escape detection, attention being concentrated on the signs and symptoms of pregnancy at this stage; but there is the possibility of such a tumour being attended by these same symptoms in the *absence* of pregnancy.

By the appearance of the catamenia or the occurrence of irregular losses, the presence of erratic pains and uterine contractions, through the rapid growth of the tumour and the absence of the usual alterations found in the cervix which are consequent upon a fibromatous growth, by the pulsations transmitted to the ear through the tumour, and which may simulate the fœtal pulsations of pregnancy, by the presence of a cyst in the tumour, giving to it the more elastic feel of the pregnant uterus, and by the complications of ascites and œdema,—by these and other misleading signs is a

myoma likely to be mistaken for the pregnant uterus, or the complication of pregnancy and myoma overlooked. More nearly concerning obstetricians are the difficulties which have deceived some of the most experienced, where, at the time of labour, a myoma has been mistaken for an ovarian tumour, a growth of any kind originating in the pelvic wall, a fæcal tumour, and even placenta prævia.

Perhaps no form of pelvic disease opens so many possibilities of error to both physician and surgeon as ovarian cystoma. And many a story of error in diagnosis can be told of even the most experienced and skilful, in which most unpleasant developments have followed mistakes in regard to ovarian cysts—whether the error has been the decision that the case was one of ovarian disease or the reverse. Even assuming that we are correct in our differentiation of a true ovarian cyst, apart from a simple cyst of the parovarian, we have in our preliminary examination to decide as to its nature, whether unilocular or multilocular, whether benign or malignant. This assumption, however, removes at once some fifty or more abdominal conditions, each of which have so far simulated ovarian cystoma as to lead to operative errors as a consequence. There are also the more frequently occurring complications to be determined,—ascites, pregnancy, ectopic gestation, cystic or other disease in the kidney, spleen, or liver, uterine myoma, suppuration in the cyst, and extensive adhesions.

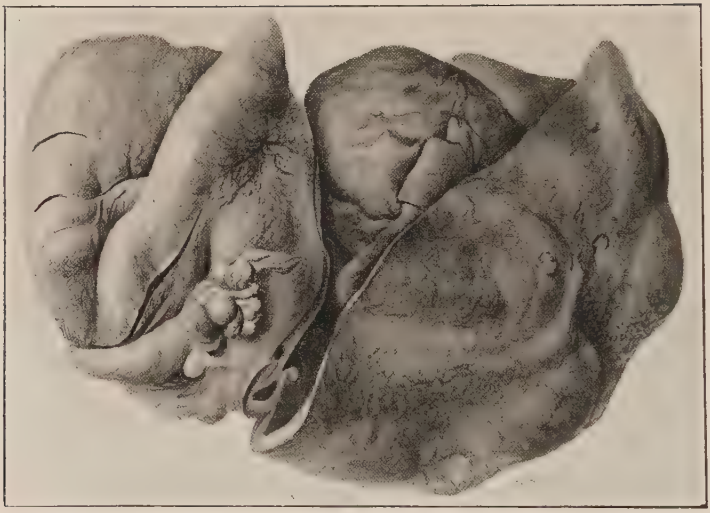
Pregnancy, associated with more or less hydramnios, has probably been the most frequent of these conditions to act as a pitfall for the gynæcologist ; and those forms of cystoma which give rise to ascitic accumulation are amongst the most difficult to determine, when the ovarian disease has attending it some of the signs, negative or otherwise, of pregnancy.

Ovarian Cystoma with Adenoma simulating Pregnancy.

I have recorded an interesting case, in which a practitioner was called in to attend a patient in labour, the pains having, as she thought, begun, though in reality it was but the commencement of a severe attack of peritonitis, which ran a most serious course.* A large tumour was

* *Brit. Gynæc. Journ.*, London, August, 1898.

PLATE VI.



Solid adenoma of the ovary with cystoma mistaken for pregnancy. Removed after a severe attack of general peritonitis followed by ascites ; rapid and permanent recovery. (Author.) [*To face p.* 35.
("Diseases of Women," 8th Edition.)

found inclining toward the left side, and a rapid ascitic distension followed. Her life was in extreme danger for some days. I operated just one month after the onset of her attack, removing the tumour shown in Plate VI., extensive adhesions, both of the sac wall and of the intestine, having to be separated. The peritonitis was due to considerable twisting of the pedicle, and the tumour proved to be a multilocular adenoma of the ovary.

OVARIAN CYSTOMA SIMULATING FIBRO-CYST OF THE UTERUS.

I have recently operated upon a woman æt. 56. The case was one of a rapidly growing tumour, obviously cystic, reaching to the umbilicus, but also occupying the pelvis, and associated with the uterus, which was pushed down and immovable. It was difficult at first to say whether the case was one of fibro-cyst of the uterus or ovarian cystoma. This was accounted for at the operation by pelvic adhesions, which fixed the cyst deeply in the pelvis. Over its entire surface the broad ligament was stretched, and enormously dilated veins coursed through the latter. The healthy appendix was partly adherent to the broad ligament, lying across it and to the left side, being at least six inches in length. The broad ligament was safely divided between ligatures, and the operation successfully completed, the patient making a good recovery. There was here an accessory right lobe of the liver, which reached as far as the iliac fossa.

Pathological report by J. H. Targett :—

"The specimen consists of a multilocular ovarian cyst about the size of a large melon. It has developed from the right ovary, and consists mainly of two large loculi. Many small cysts are found upon its interior, and a few minute cysts project upon the serous surface. The cyst has formed beneath the right broad ligament, the latter being stretched over the front and upper border of the cyst in the form of an imperfect capsule. The widely dilated venous plexus in the right broad ligament was lying on the front of the cyst when the abdomen was opened. The right Fallopian tube was therefore elongated, and the part now attached to the cyst measures 4 inches in length. Within the loculi there is much soft papillomatous growth in one part, which under the microscope shows great epithelial activity. The evidence of malignancy is not conclusive, but the histological appearances of this growth, taken with the age of the patient, and the small colloid cysts on the serous aspect of the tumour, render the prognosis unfavourable."

The relation of appendicitis to tubal inflammation and infection of the adnexa, has not had accorded to it the importance that it deserves. From many recent observations two things are evident. First, that infection of the adnexa results in a fairly large proportion of cases from a diseased

appendix. Archibald Maclaren * has published an interesting paper on this topic, and Lapthorn Smith has reported cases of ectopic gestation in which the gestation sac was distinctly infected through the appendix.† Some years since I attended a case in which the differentiation of appendicitis from salpingitis was difficult, the earlier symptoms being those of salpingitis, with an adnexal tumour at the right side. These were, however, quickly masked by those of appendicitis. I urged cœliotomy, but consent would not be given. When the surgeon who had charge of the case did finally operate, it was found that the bowel had ruptured, and there were several hard concretions in the appendix. The second point with regard to the appendix is, the danger of post-operative adhesions with involvment of the appendix causing subsequent pain and disappointment to the patient. Noble has shown the large number of cases in which appendicital trouble complicated the oophorectomy. The lesson we learn is, the need for careful disposal of the appendix in every case of salpingo-oophorectomy or ovarian resection, with the need for complete covering of the pedicle with peritoneum, and early movement of the bowel after operation.

To show the importance of discarding previous impressions in approaching a case, I may record one in which I myself narrowly escaped the consequences of too rapid an examination. I was asked by two medical men to see an abdominal case, believed to be ovarian, with a view to operation. The patient was over forty years of age, her last pregnancy having occurred twelve years previously. The catamenia had been irregular for some time, but had ceased for a few months before my seeing her. Her general health had suffered, and distress both with regard to micturition and defæcation had increased. The abdominal tumour had grown in size, and no suspicion of pregnancy was entertained. Seeing the case a day or so before operating, and prejudging from the description I had been given, I made too cursory an examination of the abdomen, and on examining per vaginam found a cervix which conveyed no impression of pregnancy. On examining through the posterior

* *Amer. Jour. of Obstet.*, July, 1900. † See p. 42.

fornix, I found fluctuation and a solid mass, and remarked that the *ballottement* I felt must be due to a solid intracystic tumour, suggesting to the medical advisers that they should feel for themselves how closely the *ballottement* of pregnancy was simulated. Preparations were made for operation, and I did not see the patient again until she was under the anæsthetic and the abdomen prepared. I was immediately struck with its appearance, asked for a stethoscope, and satisfied myself as to the fœtal pulsations and the presence of the mammary secretion. I was enabled to congratulate the anxious husband, who came to hear the result of the operation, on the unexpected happiness that awaited him.

Such a mishap teaches us in diagnosis the value of the axiom, "Take nothing for granted or on hearsay." It has always to be remembered that in the case of abdominal swellings and pelvic effusions or collections of fluid, the conditions are often transitory, and signs which are clear and unmistakable when an examination is made, may not be present even after a comparatively short time has elapsed. Thus the most painstaking medical man may find himself confronted with a completely altered state of things when the patient comes for further advice, should no examination have been made in the interval. Serous cysts rupture and are absorbed, collections of blood disappear, effusions and exudations which may have been hard and extensive, soften and become purulent, or are reduced in size, so that but slight evidences of their occurrence remain; cysts sometimes grow rapidly, and assume unexpected proportions; displacements, adhesions, and fixations also occur, either as consequences of any of these pathological conditions or changes, or as fresh complications. All this is true of the adnexa. In the uterus, small interstitial myomata both appear and grow rapidly. Recent adhesions will alter the position of the growth, as will effusions; even the emptying of the bowel and bladder prior to an examination may reveal a small pelvic tumour not discoverable beforehand.

Cervical erosions take often but a short time in making their appearance, and what is an erosion now may after a few months have assumed the character of the pre-cancerous

stage. What we are doubtful of as malignant to-day, we may not hesitate to pronounce so in a few months. An erosion and follicular degeneration with an endometritic discharge will frequently escape detection by digital touch, but would be revealed by a proper examination by the speculum. More particularly have we to be careful of any influence on our exercise of caution by the statement or history of a patient. Take, for example, the case of a wealthy patient consulting me in order to support proceedings for nullity of marriage on the ground of impotence. *The hymen was intact,* she was in perfect health, and most nervous lest I should injure her in any way by examination. The accident of placing my hand over the pubes saved me from an awkward blunder. I proceeded to carefully investigate her condition, and satisfied myself that she was pregnant,—a conclusion which she continued to indignantly deny the possibility of, as long as the outward manifestation permitted her to do so. Mentioning the case induces me to emphasise the known fact, that an intact "folding" hymen is compatible with the birth of a child at full term, and consequently must only be taken as evidence *inter alia* of the "*virgo intacta*" state.*

Speaking of the sudden appearance or disappearance of tumours, it is not necessary that they should be "phantom" tumours for this to occur. Only recently, I was sent a patient with a considerable swelling in the right lumbar region. I found a large mobile kidney, with hydronephrosis. I explained the position to the patient, and wrote my view to her medical attendant. She went home, and within a few days, while making up her mind as to interference, the swelling began to disappear, and when I saw her shortly after, there was nothing save an ordinary and not very mobile kidney to be detected. This, of course, is not an uncommon occurrence, and is easily explained by some temporary ureteral blocking, but, as in a case which happened before, it may shake a patient's confidence in one's opinion.

* For a full discussion of this subject, see "Diseases of Women and Uterine Therapeutics," 8th Edition—Author.

I removed a polypus from a lady who thought she was pregnant. On seeing her, I discovered the polypus slightly protruding from the os uteri. The following day, under ether, I proceeded to remove it, and could detect no growth. Examining the uterus with a sound, I failed to detect anything in its cavity, and came to the conclusion that, as sometimes occurs, the polypus had been extruded with uterine pains, and that its pedicle had given away. A few days subsequently she again visited me, complaining of the same symptoms. The following day I dilated the cervix, and removed a pear-shaped polypus with a long pedicle which was attached to the fundus, and which must have retracted under the anæsthetic, the sound in exploration passing round it.

At the Gynæcological Society I showed a pedunculated submucous fibroid, removed from a uterus that had not long before been curetted by an eminent obstetric physician. Hæmorrhage, pain, and considerable anæmia continuing, I saw the case ; and, on dilatation of the uterus, determined to explore and re-curette if necessary. I found the polypus within reach of my finger, and removed it. The curette had been carried round the pedicle of the polypus. I have now operated on this patient for the third time, after an interval of six years, two completed pregnancies having meantime occurred, and have removed an intra-uterine fibroid. I shall again refer to undetected intra-uterine polypus as a cause of aggravated dysmenorrhœa.

I once lost the confidence of a patient through failing to realise that a persistent pain in the gluteal region and thigh was due to the pressure of a not very large myomatous uterus. The lady was subject to gout and rheumatism, to which I attributed the pain. I showed at the Obstetrical Society a fibromatous uterus and adenomatous ovary removed from the same patient. The pain in the hip and lameness had been the only symptoms complained of, and had absorbed the attention of the medical adviser, and for these she consulted me. I discovered the fibroma, but did not realise the condition of the ovary until operation, when it was found to be the size of an orange and jammed down into the pelvis

at the left side. The symptoms completely disappeared after operation.*

A few years since, I exhibited, at the Obstetrical Society, a true fibroma of the ovary, removed from a young patient who had for some time been suffering from anæmia and amenorrhœa with persistent sickness. After a careful abdominal examination, I discovered nothing to explain the symptoms, and advised a Weir-Mitchell course. A few days subsequent to this, I found to my surprise a small movable tumour in the left inguinal region. Placing her under an anæsthetic the next day, the bladder and bowel having been emptied, I found that the tumour had quite disappeared from its position, and now lay in the pelvis in front of the uterus, requiring a vaginal examination for its recognition and isolation. In the ascent of the full bladder, the tumour had been raised above the pelvic brim.

I have not alluded to another not uncommon yet most serious error,—that of mistaking the earlier symptoms of appendicitis for inflammation of the adnexa and pelvic peritonitis. I have seen some fatal errors arising from this mistake, with the consequence that perforation occurred from a fulminating appendicitis before any operation was proposed. At the same time it is well to bear in mind the possible occurrence of some form of ovaritis or salpingitis, side by side with the appendicital inflammation (Plate VII.).

Perhaps no pathological change reaches such an advanced stage without discovery as malignant disease of the uterus. This may be due either to neglect in making a careful examination, as the disease is not necessarily attended by pain, and the other characteristic symptoms of cancer, or to the malignant changes gradually taking place in that which has been previously looked upon as a benign growth. It is not uncommon to find an advanced carcinomatous cervix discovered for the first time through the hæmorrhage which it causes, while malignant disease of the body of the uterus can often only be determined after dilatation, and removal of portions of the tissue for examination. Our increased knowledge of the pathology of the adnexa has proved how much more

* *Trans. Obst. Soc. London.*, vol. xl. p. 154.

PLATE VII.

NODULAR SALPINGITIS AND CYSTIC OVARIES.

These adnexa were removed from a multipara, æt. 39. She had suffered for a considerable time with obscure abdominal symptoms, periodical attacks of peritonitis, sickness, and general abdominal tenderness. Appendicitis had been suspected from the right iliac tenderness. The ovaries were fixed by adhesion ; both were cystic. The Fallopian tubes presented the typical appearance seen in nodular salpingitis, characterised by considerable thickening of the wall, muscular degeneration, obliteration of the lumen, and nodular enlargements in parts. The thickened muscular uterine end was directly continuous with the muscular structure of the uterus. The ligature cut the tube completely across. Hæmostasis was secured by ligaturing the cornu of the uterus at either side with catgut ligatures. The appendix was healthy. The patient made a complete and permanent recovery.

[*To face p.* 40.

DUAL MYOMA OF THE UTERUS—NECROSIS AND MUCOID WITH CALCAREOUS DEGENERATION.

There were no urgent symptoms. The patient was otherwise in good health, but the tumour was perceptibly increasing in size. Operation was decided upon, and supra-vaginal hysterectomy performed. On section, a considerable necrotic area was found in the upper myoma bounded by a zone of calcareous degeneration, and the canal of the uterus greatly enlarged and full of mucoid fluid. [*To face p.* 40.

FIG. 1. –Cyst of the meso-salpinx, simulating an ectopic gestation cyst. (Author.)

FIG. 2.—Cyst of the meso-salpinx lying in Douglas' pouch, simulating retroversion of uterus. (Author.) [*To face p.* 40.

frequently than was supposed, morbid changes in the ovaries and tubes are either of a carcinomatous, sarcomatous, or papillomatous nature, while endotheliomatous and gyromatous changes, undiscoverable before operation, are occasionally found.

To illustrate the impossibility of arriving at a complete diagnosis, even in such an apparently simple case as a uterine myoma, I may refer to a tumour recently removed by me, in which I gave an opinion for operation, in consequence of the increasing size of the tumour, though the patient's general health was not affected in any marked degree. The operation had been pronounced as one "*not of absolute necessity.*" On operating, the growth was found to consist of two distinct tumours, but intimately connected. The upper contained the uterus, the lower solid mass filled the pelvis. In the centre of the former was a larger bed of necrosed and degenerating tissue, surrounded by a zone of calcareous tissue, to be discovered only by section of the growth. The uterine cavity was filled with mucoid discharge, and was greatly dilated, as were also the Fallopian orifices. The condition is well known in Plate VIII. Death from septicæmia or other consequences of the necrotic change must have been the result in such a case, had the tumour not been removed.

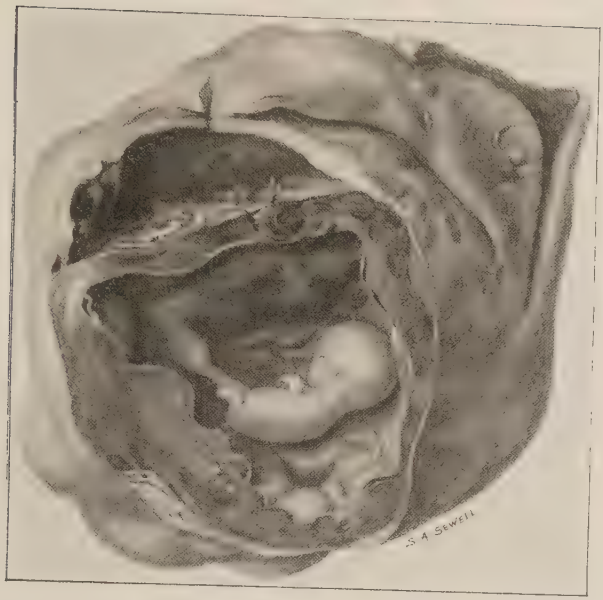
I have not included in this comparatively brief summary of our gynæcological pitfalls, those into which we are liable to be led by ectopic gestation occurring at any time during pregnancy. These every surgeon is familiar with. I lately operated in a case in which I had no certainty from the symptoms as between a hydrosalpinx, pyosalpinx, or ectopic gestation. The fluctuating tumour I felt posterior to and behind the uterus almost filled the space of Douglas. By colpotomy I found the right ovary enlarged and cystic, the Fallopian tube crossing the space, and the cyst principally at the left side. Examination proved that it was none of the conditions that I suspected, but a cyst of the mesosalpinx.* The drawing (Plate IX. Fig. 1) shows a cyst of the mesosalpinx, which was removed from a patient who had worn a pessary for some years for retroversion of the uterus. There was inability to walk, considerable pain, and some

* This patient has since been delivered of a healthy child at full time.

urinary troubles. The cyst had been mistaken for the fundus uteri (Plate IX. Fig. 2).

Case of Ectopic Gestation Simulating and Complicating Retroversion of the Uterus.

A patient, aged 30 years, was seen by me in consultation with Dr. Alexander McDonnell of Stamford-hill towards the end of March, 1901. She had been married nine years, her only pregnancy being one at the close of the first year. The periods had been normal and regular up to November 24, 1900. On different occasions she had been treated for retroversion and prolapse of the uterus. On December 10, 1900, she was attacked with violent abdominal pain, which passed off, but recurred on January 19, 1901. The catamenia appeared on January 24. On the 29th there was a recurrence of the severe pain, which lasted for three days, when she passed from the vagina what she described as "a yellowish pink substance somewhat like the roe of a mackerel." She remained in bed for a fortnight, and on February 10 was able to go out of doors. On the 25th she was attacked with severe hæmorrhage, and again she passed portions of the same substance as before. Hæmorrhage and pain ceased until March 11, when the former again recurred. On examination I found a fairly large tumour behind the uterus and associated with it, the uterine cavity being some two and three-quarter inches in length. Believing with Dr. McDonnell the case to be one of ectopic gestation and having regard to the size of the mass and the presence of adhesions, abdominal cœliotomy was determined upon and the operation was performed on April 1. The adhesions were separated with but little trouble, but in the delivery of the sac through the enlarged abdominal incision a portion of the thin wall ruptured and some extremely fœtid fluid escaped, creating at the time quite a stench. The pelvic cavity was repeatedly cleansed with weak formalin solution, and as the bowel was well protected from the sac, the only parts really affected, and this was unavoidable, were the margins of the wound. These latter were well wiped with 1 in 1000 of formalin before being closed, and an iodoform gauze drain was left in. There was nothing unusual in the course of the case for 48 hours, when the temperature rose to over 100° F. and the patient commenced to vomit. This, however, was controlled by an effervescing mixture. Sulphate of magnesia and calomel were given, both being retained, but without any result. Still, the temperature did not again reach 100°, nor did the pulse exceed 96 up to the fourth day. In the afternoon of that day, as the abdomen was distended and there was no result with enemata, while the vomiting recurred and the countenance did not improve, the pulse reaching 110, I determined to reopen the abdomen. On doing so I found the atonic bowel to be considerably distended, but could not detect any kink or cause for obstruction. The pelvic cavity was quite free from any fluid, and there was no evidence of any peritonitis or of infection of the peritoneum, but the margins of the abdominal wound showed a dense slough for its entire extent. There



Gestation sac with fœtus ; the upper cavity shown in the drawing is that in which the septic fluid was contained.

(Report by Mr. Targett) :—

"On section the wall of the gestation sac was found to be infiltrated with blood-clot and fibrin, as in a tubal mole. Where suppuration has occurred the placental tissue is separated from the inflamed tube by pus, and chorionic villi are in actual contact with the inflammatory products. The mucous membrane of the tube is destroyed and replaced by granulation tissue. The tumour is roughly spherical in shape and measures $8 \times 7 \times 6$ centimetres ($3\frac{1}{4} \times 2\frac{3}{4} \times 2\frac{1}{4}$ inches) in its chief diameters after fixation in formalin. A portion of the posterior wall of the mass has been removed and reveals two cavities. The larger of these is the gestation sac containing a fœtus, while the smaller is a space formed between the gestation sac and the wall of the dilated Fallopian tube. In the recent state this latter space was filled with very offensive pus. Flattened out on the half of the tumour nearest to the uterus is the right ovary. The characters of the gestation sac are precisely those of an apoplectic or blighted ovum. It measures about five centimetres in its chief diameter, and its wall is composed largely of blood-clot in various stages of consolidation. The interior is lined with amnion, which is unevenly raised by hæmorrhages beneath it. A fœtus measuring 2·75 centimetres is attached to the wall of the sac by an œdematous umbilical cord 1·75 centimetres in length, corresponding with the stage of development at the end of the second month. The suppurating cavity, semilunar in shape, represents that part of the dilated ampulla of the tube not occupied by the gestation sac. From this relation it would appear that the tubal gestation had ended in a molar pregnancy or apoplectic ovum, and that secondary suppuration had been set up within the dilated tube and around the ovum. Consequently the pus had collected in that internal cavity which always surrounds a tubal mole owing to the ovum being adherent at only one spot upon the wall of the dilated tube."

[*To face p.* 42.

had been no indication of this from the appearance of the incision. The patient had complained of little or no pain from the time of the operation. The slough at either side was cleared off as far as possible and a drainage tube was inserted. As I had to leave home the same night, Mr. Targett kindly took charge of the case for me. The temperature fell the next day to normal, but again it rose to 100° in the evening, the pulse becoming more rapid (from 120 to 140), with a return of the vomiting. Despite every means employed to combat the sickness and maintain her strength, including enemata, saline injections, washing out of the stomach, etc., death occurred on the seventh day after operation.

In this case the temperature never exceeded 100·2° F., and there was an absence of the usual symptoms of general peritonitis. (Plate X.)

It would seem that the source of infection must have been through the adherent bowel. The patient having suffered from retroversion of the uterus, the early symptoms might naturally lead to the impression that it was an enlarged retroverted and gravid uterus, and tend to make the diagnosis less certain. From the size of the tumour and the impression which it conveyed of fixation by adhesions, I determined on the abdominal operation, though, as events proved, considering the nature of the sac, the vaginal one would have been the safest one for the patient. Had I a similar case again, with rupture of a fœtid sac, having protected the bowel, I should first char the margins of the abdominal wound with the thermo-cautery, and then, at some distance from the charred surfaces, make a new incision at either side before closing the wound. Not long since I opened the abdomen for a large and very fœtid subperitoneal abscess which had penetrated the peritoneum. Having evacuated the pus and thoroughly cleansed out the abdominal cavity with formalin, disinfecting the edges of the wound, which were covered by a foul and deep slough, I removed this at either side before bringing the edges together and drained. Contrary to my expectation, the patient made an excellent recovery.

The few instances that I have here given of the dangers that beset us in making a diagnosis, establish the need there is for extreme care in the first examination of a case. It must, however, be admitted that if, as is absolutely necessary in a large proportion of cases, anæsthesia be availed of, and the bimanual method of examination, by the vagina and rectum, in the dorsal position, be adopted, the rectum and bladder having been previously emptied, most risks of blundering will be avoided. Such an examination includes the judicious use of the sound,—though resort to it is less necessary when the finger becomes more educated and those precautions I have referred to have been taken. But no matter how exhaustive be our inquiry into the antecedents and history of a case,

or how searching the investigation of the abdominal and pelvic viscera, there still remains a balance of conditions, the nature of which can only be ascertained by abdominal exploration or colpotomy.

Carcinomatous Tumour of the Ovary simulating Myoma of the Uterus—Operation.

Patient, aged 52, married. Nullipara ; had had severe pelvic pain for three months ; of late unable to sit ; great difficulty with the bowel, and also constant passing of urine. Has had to lie on her face and hands to avoid pain. The patient's father died of cancer, at the age of 67. On examination I found a tumour occupying the pelvis, immovable, indistinguishable from the uterus, also felt suprapubically. Examined through the rectum it was hard and immovable. The os uteri was displaced upwards and forwards almost out of reach. It was extremely difficult to determine whether the tumour was ovarian or uterine ; I leaned rather to the view that it was the latter, and feared from the history and apparent rapidity of growth that it was malignant. I operated on February 21, 1901, making a free incision, the patient being in the extreme Trendelenberg position. On opening the peritoneum some ascitic fluid escaped, and I found the bladder considerably elevated out of the pelvis and adherent to the parietal peritoneum. The whole omentum was studded with carcinomatous masses. On passing my hand into the pelvis I found its entire cavity filled with a bossy tumour reaching behind the uterus, but evidently growing from the right ovary, and adherent. With a little trouble I separated the adhesions and delivered the tumour, which was ligatured off. The uterus and other ovary were healthy. There was some trouble in ligaturing off the torn adhesions at the bottom of the pelvis, but in the position I have mentioned and with a good light this was accomplished. As the entire omentum was carcinomatous I did not attempt removal, simply replacing it and closing the abdomen with a single layer of sutures. The course of her convalescence was uninterrupted. This was the third case of carcinomatous infection of the omentum and bowel from carcinomatous ovary I have seen within the year.

CHAPTER III

THE THERAPEUTICS OF DISORDERS OF MENSTRUATION

FEW terms in medicine have given rise to more confusion of thought and greater errors in the clinical treatment of disease than those of "functional" and "organic." To define the limits of the borderland where disturbance of function exists without any organic change, temporary or permanent, and to draw for clinical purposes a line of demarcation between such, and those conditions in which we find pathological encroachments occurring, is often impossible. To determine where simple aberration of function ends, and what we commonly understand by "organic change" commences, is beyond our diagnostic capacity. Also, the local symptoms or signs which point to abnormal action frequently have their origin in pathological changes, transitory or permanent, in some organ or organs which have no anatomical or physiological connection with the disordered part or viscus. As a consequence, there is the danger of continuing to regard states as functional which are associated with initiatory or progressive histological alterations in structure in the part affected, or of the attention being wrongly directed from the primary causes of disease elsewhere to the physiological interferences for which relief is sought. Thus we are liable not only to expend our therapeutical energy in the correction of symptoms, overlooking some associated morbid physical change, but to fall into the greater error of ignoring the more serious complications coexistent with these. Again, such concentration of attention on disordered function induces the natural tendency

to treat symptoms, without harking back for the discovery of the real cause which has led to their production.

To no deviation from the normal course of a physiological function do these remarks apply with greater force than to disturbances of ovulation, and its associated and frequently correlated external manifestation, the menstrual flux. A considerable time must elapse before the influences which are consequent upon an imperfect knowledge cease to manifest themselves in a routine acceptance of terms and an indefinite grouping of symptoms, without such accurate differentiation as will assign to each the physiological or pathological cause which has produced it. This confusion is the more to be avoided when we are dealing with closely correlated signs and symptoms widely differing from each other, yet often concurrent or alternating, as is the case in those disorders of menstruation which we group under the heading of amenorrhœa, dysmenorrhœa, menorrhagia, and metrorrhagia.

These deviations from normal menstruation are often coexistent in the same individual. It is not uncommon for a woman to suffer from amenorrhœa, or emansio mensium, and dysmenorrhœa with periodical attacks of menorrhagia. During the menopause, cessation or suppression of menstruation, which is occasionally profuse and generally erratic, is rather the rule than otherwise. Amenorrhœa and dysmenorrhœa are commonly associated. So, frequently, are dysmenorrhœa and menorrhagia. This linking of clinical conditions has its counterpart in the correlated states of ovary, Fallopian tube, and uterus, which are antecedent to or attendant upon the normal or abnormal menstrual epoch.

Regarding modern physiological views as to the processes operating during ovulation and menstruation, we may thus summarise the most important facts which have a bearing on the clinical features presented by disorders of this function. While with Schröder we regard the discharge of the ovum as the most important factor in the act of menstruation, this evolutionary process has associated with it considerable changes in the Fallopian tube and the uterine mucous membrane, as accessory occurrences. The physiological escape of the ovum has as its expression an act of menstruation. It

is, as Strassman says, a rhythmic life expression. The uterine manifestation and the opening of the follicle are independent occurrences, a period of about two days being regarded as generally elapsing between the two. At the same time, we know that ovulation occurs without menstruation, and that spurious menstruation takes place after the removal of the adnexa. The alterations in the vascular supply of the ovary are associated not only with similar changes in the Fallopian tubes, but probably with antecedent constrictions in the vessels of the broad ligaments, while it appears certain that changes in the relations and positions of the adnexa, or their pathological conditions, may interfere with the rhythmical regularity of menstruation. During the period between the follicular rupture and the appearance of menstruation, momentous changes are occurring in the ovarian and uterine vascular connections. An important part is played not only in the rhythmical occurrence of the act of ovulation and its menstrual attendant, but also in its character and quantity, as well as in the nervous phenomena attendant upon it, by the vasomotor supplies of the genitalia through the renal, abdominal, and pelvic plexus. The normal nutritive balance maintained during the interval is disturbed before the onset, and, as a consequence, a perverted metabolism is induced in the internal genitalia. This culminates in the disintegrating process with its associated discharge from the uterine endometrium. The katabolic activity is provided for through the free supply of blood from the ovarian and uterine arteries, the large uterine and ovarian veins, the larger outlets in the broad ligaments, and the ramifying plexuses of lymphatics, which make their way to the pelvic, lumbar, and inguinal glands. The generative forces acting after fertilisation of the ovum, or in the maturation of the follicle, and the anabolic manifestations occurring prior to its maturation, are doubtless, as many believe, under the control of a special cord centre in the lumbar region—the generative or sexual brain; but the clinical facts are numerous which point to the inhibitory influence exerted by the mind and the various psychical excitations on both the constructive and destructive forces at work in the evolution and involution of the entire process.

Menstruation has thus, for clinical purposes, to be regarded in the light of a complex train of cyclical physiological phenomena, involving various structures in distinct but intimately correlated parts, manifesting themselves in rhythmical regularity and sequence. This cyclical and rhythmical sequence is subject to interferences which have their commencement at times within the organ in which these processes originate, or are determined by extragenital abnormal conditions, present either in the nervous or circulatory systems, or the various organic changes which have taken place in such viscera as the brain, heart, liver, spleen, or kidney.

If we analyse the first group of disturbances, we find that a fair proportion of them is due to congenital abnormalities in structural configuration, in position or absence (partial or complete) of certain parts of the genitalia. A second class is marked by the pathological changes that have previously occurred in some portion of the generative tract, ovary, oviduct, uterus, or vagina. Lastly, there are the cases in which interference arises from concurrent, congestive, and inflammatory states of the adnexa or uterus, induced by some accidental or other excitation, as a traumatism, exposure to cold, coitus; excessive, inefficient, or incomplete cohabitation; masturbation, too violent physical exercise, or severe and prolonged mental study and strain.

In the second group we place in the foremost rank that numerous class of sufferers in whom the initial mischief is found in a vicious, hæmic metabolism, associated with errors of an integral character in the nature and quality or the quantity of the blood supply. The error may be in nature and quality—as in anæmia, ordinary or pernicious; as in leukæmia and lymphangioma; in the tuberculous; or in that class of diseases of an impeded circulation of which we have a culminating example in the condition known as Raynaud's disease.* It may be in both quality and quantity—as in

* Since this was written I have read the observations of Dr. William Ord on "The Clinical Relations of Arthritis" in the *Polyclinic Journal*. In speaking of the post-rheumatic changes which occur in the joints in Raynaud's disease, and the circulatory conditions found associated with it, he refers to Heberden's "digitorum nodi," and notices the similarity between the joint changes in Heberden's

the amenorrhœa and dysmenorrhœa of unhealthy obesity, with its inefficient tissue metamorphosis, resulting in the misladen and overburdened blood supply; or in quantity alone—as in the full-blooded, plethoric girl, in whom with each rhythmical generative excitation the local determination of blood is increased in parts naturally so richly supplied as the adnexa and uterus. Erratic appearance of ovulation, delay in the associated menstrual discharge, alterations in the rhythm of the act, obstructive states inducing stasis in the broad ligaments, Fallopian tubes, and uterus, are the consequences. These may follow separately or coincidentally in the ovaries and in the uterus. They may start prior to, at the time of, or during the menstrual discharge. Embraced in this group are those interferences of which we find examples in the arrest or suppression of menstruation, with or without attendant dysmenorrhœa, the consequence of a purely psychical influence, such as grief, mental shock, fear, remorse, or the onset or continuance of insanity. In this group also we include those instances of suppressed abnormal or erratic menstruation attributable to the presence of disease in some vital organ. The catamenia are frequently absent in tumours of the cerebrum and cerebellum, after inflammation of the meninges, and in degenerative lesions due to alcohol, tubercle, or syphilis. Both menorrhagia and metrorrhagia are induced by mitral stenosis and cardiac dilatation. Hepatic and

disease and those that occur in Raynaud's, and says, "I think that in these nodes the effect of uterine irritation is suggested in a way that can hardly be explained otherwise than by some relation with uterine disturbance. Heberden, in his original paper published in the early part of the century, summarised thirty-three cases of the digitorum nodi, noting particularly the fact that they occurred only in women, and in women of middle age. He noticed also the fact that the affection is not commonly very progressive. It touches a point of age beyond which the influence of the sexual system is likely to be much diminished, and, while there is no retrocession of the chronic arthritis, there is no such growing deformity as we observe in most of our cases of arthritis.

"I published a few years ago an analysis of thirty-three cases of the nodes, the number being, curiously enough, exactly the number of cases which Heberden analysed. In a large percentage of these I found indications of uterine trouble, particularly of such trouble as is associated with the climacteric. In no case did I detect any serious uterine disease, and, so far as my analysis could take me, I found that there was no particular tendency to subsequent affection of the uterine organs. More or less, the uterine troubles and the active affection of the joints die out together."

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splenic engorgement and congestion, as well as tumours, malignant or otherwise, both of liver and spleen, or cirrhotic changes in the former organ, frequently cause excessive menstrual discharge and also its cessation. The complication of menstrual disorder with mobile kidney, renal vascular changes, associated with degenerations in the secretory apparatus of the kidney, as in gouty and tuberculous conditions, is a matter of common observation.

Lastly, we have to remember the effects of climate and of zymotic diseases, such as the specific fevers, typhus and typhoid, diphtheria, scarlet fever, and smallpox. During a period of eleven years' service in a fever hospital, in which all forms of zymotic fever were treated, the instances I met with of menorrhagia and uterine hæmorrhage were few. They occurred mainly in the malignant forms of disease such as purpuric cases of smallpox and typhus fever, septic typhoid, and malignant scarlet fever, and they were comparatively very rare. On two occasions, I have seen death follow during typhus from uncontrollable uterine hæmorrhage; there was hæmorrhage also from the gums and lips. In two cases of scarlet fever the fatal issue was preceded by uterine hæmorrhage, and, in an epidemic of cerebro-spinal arachnitis, in some of the cases there was a hæmorrhage from the vagina before death. Post-typhoidal amenorrhœa is generally the result of an anæmic or leucocythæmic condition of the blood.

Climate and atmospheric surroundings are known factors in the causation of menstrual disorders. This is more specially noticeable in the tropics, where we find precocious and early menstruation the rule. The cases I have seen, however, were mostly due to disease of the adnexa, defective post-partum involution, or the climacteric. It is noteworthy how differently high inland altitudes, the air of the sea-coast, and that of cities, affect menstruation. With some, the exhilarating effect of the mountain air appears to have a repressant effect on the catamenia, and this may also be said of residence by the sea, especially if this be in too close proximity. Sedentary life in towns necessarily tends to anæmia, which is aggravated by certain indoor occupations;

otherwise, city life, unless the habits or amusements connected with it are unhealthy, does not appear to have much effect. The characteristics of the soil and the nature of the water supply must also have important influences on this sexual function, involving as they do the general health of the woman, through the dampness of the former, if it be clay, and the action of the chemical constituents of the water on certain predisposing causes, such as gout, rheumatism, and anæmia.

I have not referred specially to the menopause or climacteric period. It has been unfortunate that the occurrences frequently met with at this time of a woman's life *have been in great measure looked upon as physiological and necessary accessories to ovulation, and not, as they frequently are, as the results of pathological changes in the generative organs.* Thus it has come to pass that hæmorrhage, intermenstrual discharges, rectal and bladder symptoms, and many of the reflected conditions observable during the climacteric, have not been investigated, it having been assumed that such were mere functional aberrations consequent upon either the abrupt or gradual cessation of menstruation. And so it is not uncommon to find adnexal tumours of various kinds, hyperplastic uterine enlargement, myoma, malignant disease of the body or cervix, intra-uterine fibroid, follicular cervicitis, and cervical polypi, with chronic inflammatory states of the endometrium, pass undetected, because the woman is passing through the change of life.

If we look more closely into the causes connected with the disappearance of the catamenia, we find just those conditions which predispose to pathological change. Take, for example, the arrested development of a Graäfian follicle, its premature rupture, the extravasation of blood into the stroma of the ovary, leading to cystic degeneration, and the formation of an ovarian hæmatocyst, which, if the sac should rupture, is followed by pelvic hæmorrhage. Such abortive maturation may also lead to follicular dropsy, or the hydrocystic change may occur in the stroma of the ovary, when such dropsical conditions come to be associated with surrounding fibromatous degenerations. The vascular

engorgement of the ovary finding no relief through the normal discharge of the ovum, the ovary does not become reduced in size synchronously with the oviduct, and a hypertrophic hyperplasia follows, which is the predecessor of sclerosis. Such advancing sclerosis, with its attendant interstitial degenerations, not only affects the ovarian blood vessels and lymphatics, but also the ovarian nerves, by pressure, constriction, or inflammation. These vascular and follicular changes may have associated with them the secondary consequences of past ovarian mischief occurring through the child-bearing period—cirrhotic, cystic, colloid, or endothelial. Such abnormal ovarian alterations, seeing the part played in menstruation by the Fallopian tubes, and their liability to associated inflammatory changes with those occurring in the ovary, as also to alterations in position owing to displacements of the ovaries and uterus, must occasionally, and may frequently, have coincident changes in the tubes, both in their lumen and walls.

Arrested ovulation, attended by a cessation of the "corresponding life expression" of the uterus, with a diminution or interruption of its physiological relief by the menstrual flow, throws back useless secretory products into the turgid uterine tissue, which may not be absorbed, thus inducing further congestion and exudation. Hence follow the connective tissue changes which are common in the chronically enlarged uterus of the menopause, the malnutrition consequent upon these, with the atonic and easily bleeding vessels, and the enfeebled muscular elements. The endometrium likewise suffers by the suppressed, abortive, or excessive functional activity coincident with that which has been taking place in the parenchyma of the uterus, subacute congestive and inflammatory conditions remaining. With the excessive blood discharge comes excessive shedding of the epithelium, disintegration of the mucous membrane, and enlargement of the utricular glands, with exaggeration or alteration of the character of their secretion. This results in a chronic corporeal endometritis, that ends later on in atrophic changes, denudation of epithelium, or such conditions of the endometrium as hypertrophy, hyperplasia, or that variety of endometritis to which the term hæmorrhagic

is applied. It is in connection with some such changes that polypi are so often found at the climacteric. If, as is not uncommonly the case, displacements are present, such as retroversion with procidentia, the heavy uterus, with its relaxed ligaments, increases the woman's other troubles by pressure on the rectum and bladder. All these effects, taken together with the excitations caused by the affected ovaries and tubes, sufficiently account for the various reflex phenomena and neuroses which accompany the menopause.

Thus it will be manifest that we may broadly divide the various neuroses of the menopause into those which are incidental to the disturbed or arrested physiological function, and in which no considerable pathological changes in, or abnormal conditions of, the generative organs are to be found, and those where, in addition to such a cause, we have also present pathological abnormalities, with displacement of an organ. It becomes a matter of the first importance to decide, in any case in which there is a suspicion that some disorder of the ovary or uterus is associated with symptoms occurring during those years when the change of life is proceeding, whether there are these pathological or abnormal states present. During this time we may be led astray by such commonly recurring symptoms as aggravated headache, various neuralgias, different forms of migraine, locomotor troubles, insomnia, epilepsy, and different degrees of alienation; ocular troubles, with exaggerated consequences of past errors of refraction; varying degrees of aphonia; tinnitus aurium, with middle ear and labyrinthine complications; gastric crises, sickness, and gastralgia; cardiac irregularities, dyspnœa, and a legion of dyspeptic complaints; and, perhaps more frequently than any other, such vesical troubles as irritation with difficulty of retention, or pain on micturition.

We have, then, during the menopause, to remember, as Goodell has well put it, that "the nerves are mighty mimics —the greatest of mimics, and cheat us by their realistic personations of organic disease, and especially of uterine disease." While we are not to approach a case biased by the idea that "the womb is at the bottom of every female ailment," we must not risk, by expectancy and waiting on

nature, trifling with symptoms or signs as functional when they are essentially organic, thus falling into the common but fatal and sad error of assuming that such symptoms and signs have not either associated or coincident with them organic changes in the pelvic viscera. *The awakening is all the more deplorable when, as often happens, the error is irretrievable.*

As we find the necessity for caution, and the exercise of foresight, at the time of the natural disappearance of menstruation, so is the same need for care proved by mistakes we are liable to make when it is first appearing. As the diseases of the pelvic organs in children are becoming better understood and investigated, it is the more evident that they are not so uncommon as was thought. How early menstruation may occur is shown by Thum's case,* in which the discharge commenced on the second day after birth, and lasted for five days. Robert Barnes has recorded the case of a girl in which the catamenia commenced at 16 months and continued regularly, and Mengus has noted regular menstruation in a child 23 months old. Instances of precocious menstruation in children are frequently occurring. I have treated a child of 8 for profuse menorrhagia, which had induced anæmia and a hæmic-cardiac murmur. On examination under anæsthesia, I found the uterus relatively larger than it should be in a child of this age. Locally, hot douchings with hydrastis, and the internal administration of ergotine with digitalis and muriated tincture of iron, effected a rapid cure, the child having suffered for a year before I saw her. Cystic and dropsical conditions of the ovaries, displacements of both the ovaries and tubes, dermoids of the ovary, cystomatous growths, sarcomata, carcinomata, as well as other growths, have been frequently recorded in children before puberty; and gonorrhœa, ending in salpingo-ovaritis, is not an infrequent occurrence in the pelvic diseases of childhood.† The record case, so far as I know, of ovariotomy in a child, is

* *Ann. Univ. Med. Science*, 1895, vol. ii.

† George Carpenter, "Value of Rectal Exploration as an Aid to Diagnosis in Diseases of Children," *Pediatrics*, vol. i., June, 1896; Howard Kelly, "Diseases of the Ovaries and Fallopian Tubes in Children," "Cyclopædia of Diseases of Children," vol. v., Supplement.

that of Chiene, who removed from a swelling in the inguinal region the ovary and Fallopian tube of one 3 months old.*

The practical point, however, to which I wish to draw attention is, that most of the ovarian cystomata occur about the time of puberty, and that the nearer to puberty the patient is, the greater appears to be the success of the operation for their removal. Should, therefore, menstruation occur early and continue regularly, its cessation, despite the use of ordinary means to reinduce it, should arouse suspicion of some possible sexual affection to explain this. So also should the non-appearance or prolonged postponement of the catamenia, especially if such be attended by other signs of ill health on the part of the girl, suggest, always under anæsthesia, an exploration by the rectum and vagina of the pelvic organs. This would prevent not only the serious oversight in not recognising the presence of morbid growths and diseased conditions of the adnexa, but such awkward mistakes as dosing with medicine for a considerable time, and sending to Continental ferruginous spas patients with congenital absence or malformations of the genital organs, prolonged treatment for the consequences of atresic conditions of the uterus, vagina, and hymen, and the still more serious error of treating a young girl who has become pregnant for gastritis complicated by amenorrhœa. I have elsewhere given the details of cases in which this latter mistake has been made, even by experienced practitioners, and have instanced the particulars of one in which a girl of 12, having conceived, was treated for gastritis for a considerable time before the real cause of ill health was discovered. A young girl came under my care who in two general hospitals had been treated for gastritis and ulcer of the stomach. Fixation of a floating kidney cured her completely. I have lately recorded, at the Obstetrical Society of London, the notes of a case of congenital absence of the internal genitalia and the mammary glands.† No vaginal examination had been made, and naturally the absence of menstruation had been energetically treated by

* *Edin. Med. Journ.*, 1881, p. 1132.

† *Med. Press and Circ.*, London, April, 1900.

various remedies, hydropathic and other. Such a history as the following is not unusual.

CASE OF ATRESIA OF THE VAGINA.

I was called to a young girl of 16, suffering from symptoms of peritonitis. The abdomen was swollen, and there was considerable tenderness. She had never menstruated, and had been treated for amenorrhœa. Her doctor had made an examination on the onset of the symptoms, and found the vagina occluded by an imperforate hymen. Making an incision through this, he discovered that the lower part of the outlet was completely closed. With a small trocar passed for some distance, a small quantity of tarry fluid issued. When I saw her the following night, the symptoms had considerably increased. Adopting every antiseptic precaution available, I made an incision through the partition closing the outlet, and this I enlarged with the finger, reaching the greatly distended vaginal cavity, and evacuating a large quantity of the usual tar-like fluid found in such cases. A drain was inserted, and with suitable treatment the patient did well.

I quote the case merely as an example of the necessity for immediate examination, should abdominal and pelvic complications arise, when there has been suppression or non-appearance of the catamenia. In early adolescence also, at the onset of menstruation, especially if it be suppressed or irregular, we find abnormal mentalisation, various minor mental disturbances, and occasionally the first evidences, temporary or permanent, of some form of insanity. It appears, however, that it is the psychic state that influences most frequently the menstrual act rather than the converse; but this is certain—that in the majority of such cases, whether they assume the epileptic, melancholic, or demented type, they are all more or less influenced by the catamenia, and in many cases are associated with an irregularity, the correction of which materially aids other treatment. It is at this age also that a habit of masturbation, which is not due to morbid mental states, but which may be the exciting cause of these, is also liable to interfere with the normal menstrual function, and possibly to originate thereby pathological changes in the genitalia.*

Reviewing the principal points in this brief sketch of the etiology of menstrual disorders, we can draw this deduction

* See Chapter V.

—that whether the abnormality show itself in absence or suppression of, or painful or profuse, menstruation, the first step towards a rational treatment is to exclude in their causation any extra-genital source. This involves a careful investigation of any symptoms which point to disorder in function or structure, in the brain, organs of sense, heart, or the abdominal viscera. It furnishes one of the many reasons why the gynæcological physician must not be merely a gynæcologist in the narrower acceptation of the term, but must bring to bear on the diseases of women a correct acquaintance with, and a cultivated knowledge of, general medicine. Indeed, if he is to be sure of his position, the frequent interferences with the organs of sense, some of which I have already enumerated, demand a careful and critical examination of these, in order to determine how far the associated aural, visual, nasal, laryngeal, or œsophageal symptoms are functional or truly organic.

Having so far determined the fact that the disorder has not an extra- or intra-pelvic pathological origin, we are in a position to decide whether the affection we have to treat is of an organic or functional nature. The confusion of thought which arises out of the treatment of symptoms, as embodying a distinct morbid state such as amenorrhœa, dysmenorrhœa, or menorrhagia, is thus avoided.

We may then subdivide the therapeutics of disorders of menstruation under three heads—hygienic, medicinal, and operative. Under the first we include, in the treatment of suppression or absence of the catamenia, suitable gymnastic exercises, embracing a course of Swedish movements and massage. With this may be combined the external and internal use of galvanism or faradisation. I have not found that cycling, save in cases in which it was overdone, or where some cardiac trouble was present, has been mischievous, but rather the contrary. Decidedly advantageous are those open-air exercises in which nearly all girls at school have now the opportunity of joining. The one point for safety is, that the degree and amount of exercise have to be duly proportioned to the individual patient. In certain instances, especially where dysmenorrhœa is associated with amenorrhœa, a full

Weir-Mitchell course does good, but this also has to be carefully regulated, with due consideration of the digestive powers, the nervous susceptibilities, and temperament. Not infrequently has this assumed panacea of "blood-making" by rest, isolation, and overfeeding done more harm than good. Like many other so-called "cures," persistence in its application, despite evidences of its unsuitability, ends not in cure but disaster. The danger consists in postponement of surgical measures which alone can cure, and under conditions and circumstances in which delay may be not alone injurious but disastrous.

Suitable hydropathic treatment occupies a prominent place in menstrual therapeutics. The iron spa of which I have personally the most experiences is that of Schwalbach, with its carbonated *stahlbrunnen* and *weinbrunnen* springs, which are most indicated in amenorrhœa associated with various forms of anæmia. Spa comes next, but there is something in the air of the Nassau valley, blowing from the Taunus Mountain, 360 metres above the level of the sea, that adds to the effect of the waters; also, as a subsequent resting-place, Schlangenbad is admirable. The moderate altitudes of both Spa and Schwalbach are indicated in anæmia. The more numerous sources of the former give a larger variety of water; and its bicarbonate of iron, with free carbonic acid, is, as in the case of Schwalbach, especially assimilable in those cases of chloro-anæmia, in which iron is often with difficulty borne. Franzenbad and Marienbad have both given me good results; while, in certain cases in which arsenic is desirable, the waters of Royat, in the Puy-de-Dome, 150 metres higher than those of either Spa or Schwalbach, are scarcely to be excelled. The air is invigorating and stimulating, as are also the baths, which have to be taken with caution. These are the ferruginous spas, in which I have the most faith; and if a course of electrical baths be indicated, Wilbad-Gastein, with its elevation of 960 metres, its splendid Alpine surroundings and numerous sources, is the one I advise for selection. In certain cases where there are hepatic troubles complicating disorders of menstruation, Plombières has answered admirably, while patients with renal and bladder complications I have found most benefited at Kissingen, Marienbad, Vals, Vichy,

or Vittel. For purely gouty complications I prefer Carlsbad, Contrexeville, or Brides-les-Bains.* It is not generally known that there is an admirable iron spa at Felixstowe in Suffolk, the analysis of which shows that it corresponds closely to the *Weinbrunnen* of Schwalbach. Possibly the waters of Tunbridge Wells are also not used as much as they might be, and I have found the Bedfordshire Flitwick water most useful to administer with food. Kreuznach is the foremost absorbent spa on the Continent for exudations, old infiltrations, hyperplastic conditions, and muscular degenerations, but it is not as strong as our own Woodhall Spa, nor so convenient of access, and is very relaxing in summer. I can, after years of trial, testify to the most excellent effects of the Lincolnshire Spa. The danger to be remembered in trusting to the efficacy of either of these bromo-iodine sources is, that pathological conditions, which they cannot in any way influence, may become worse instead of better, and complications, the results of delay, may occur, which otherwise would be avoided.

Space does not permit of any lengthy reference to such adjuncts of treatment as regular bathing at a proper temperature, followed by efficient friction of the skin, attention to clothing, and avoidance of undue exposure to chill, and especially coldness of the extremities in girls of languid circulation, the correction of errors of diet, and attention to the systematic action of the bowels. In these days of high pressure in the education of young girls preparing for middle-class university examinations, and for the many intellectual tests now applied to women competing for public posts, as well as those who are studying for university degrees, the mental strain involved, combined with the effects of long hours of study, are potent factors, favouring both amenorrhœa and dysmenorrhœa. The temptation to heads of schools and colleges to force the work of their pupils with a view to successful results at examinations is great, and is answerable for many a breakdown in the girl's sexual health.

* I am here specially referring to Continental spas. I by no means desire to infer that the waters and baths of Buxton, Bath, Strathpeffer, and Harrogate have not their special efficacy in suitable cases in which there are indications for the medicinal properties of their respective waters.

With regard to internal medication, I will only allude to some special remedies, with many of which I have personal experience. We are indebted to Dr. Murrell for urging the use of senecin, the extractive of *Senecio aureus*, both in cases of amenorrhœa and dysmenorrhœa. The dose is from 2 to 6 grs. It may be given alone, or, according to indication, with hydrastia or hydrastinine. The latter drug I have found useful in congestive and spasmodic dysmenorrhœa, the more so if combined in administration with the bromides. *Piscidia erythrina* may be given in combination with both hydrastia, or extract of hydrastis, and extract of viburnum, in doses of from 1 to 2 grs. in dysmenorrhœa and menorrhagia. The use of the *Hydrastis canadensis* in atonic vascular states of the uterus has now become so universal as to need little comment. Its crystalline active principle, *Hydrastinė hydrochloride*, is one of our most valuable astringents in uterine hæmorrhage, either as a consequence of hyperplastic enlargements, congestion, hypertrophic or fibroid states, or in simple menorrhagia. A form I have found most useful is, hydrastine hydrochloride $\frac{1}{3}$ gr., ergotine $\frac{3}{4}$ gr., cannabin tannas $\frac{1}{2}$ gr., stypticine $\frac{1}{4}$ gr., which can be conveniently given as a palatinoid. *Sculcopine* is a colourless extract of *Hydrastis canadensis*, containing hydrastine, and is equivalent in strength to the fluid extract. For metrorrhagia, with spasmodic dysmenorrhœa, the *Salix nigra*, or black willow, has been recommended strongly, and in neuralgic pains associated with ovarian hyperæsthesia. *Cornutin hydrochloride* has been used in menorrhagia, alone or in combination with ergot, and in various forms of uterine hæmorrhage. Its dose, hypodermically, is $\frac{1}{12}$ to $\frac{1}{6}$ gr. *Cimicifuga* will be found serviceable in menorrhagia or metrorrhagia arising out of uterine subinvolution. It and its active principle cimicifugine are sometimes efficacious in amenorrhœa and dysmenorrhœa attended by ovarian neuralgia. *Viburnum*, alone or in combination with *caulophyllin* (the glucoside from *Caulophillum thalictroides*), is useful both in amenorrhœa and dysmenorrhœa, more particularly if either be due to some accidental cause, such as chill or shock. The value of *apiol* as an emmenagogue is well known, but its action is variable. Of its two varieties,

brown and green, the latter appears to be the most active. I have frequently given apiol, together with *colofine*, with advantage. The extract of *Aletris farinosa* may be combined with viburnum or caulophyllin in dysmenorrhœa and amenorrhœa, and a combination that I have often given is the extracts of viburnum and aletris, with caulophyllin and belladonna. The action of *manganese dioxide*, especially in combination with ferrous carbonate, in amenorrhœa complicated with anæmia, is undoubted. The iron may be given separately, or with arsenic and quinine. An admirable combination that may be administered in pill, while the dioxide is given in palatinoid, is that of dried sulphate of iron, quinine, extract of nux vomica, and arsenious acid. *Hæmoglobin* also, in anæmic amenorrhœa, should be administered with the dioxide of manganese. *Borax*, on several occasions, I have had success with, and it is to be recommended with the bromides for epileptiform seizures at puberty, when the catamenia are either delayed or suppressed. I have tried *santonin* as an emmenagogue, but cannot say much for its efficacy. *Castor* has been lauded in dysmenorrhœa. I have not found it of much value. *Monobromate of camphor*, where there is distinct ovarian pain, may with benefit be combined with other remedies. The changes have been rung on all the preparations of the coal-tar series for the pain of dysmenorrhœa. As I have said, I believe antipyrin or phenalgin in combination to be the best. Three proprietary combinations I have found most beneficial—the *aletris cordial*, *liquor sedans*, and *celerina;* the first, combined with other uterine hæmostatics, in menorrhagia, the second for the pain of dysmenorrhœa, and the third as a useful tonic which can be given with iron and other preparations to those who are debilitated by excessive losses or suffering. Indispensable in those cases both of amenorrhœa and dysmenorrhœa in which we have cardiac irregularity, enfeebled action, mitral stenosis (or at times in aortic stenosis), in the absence of compensation, are *the vascular tonics*, strophanthus and digitalis. They can be given in menorrhagia and metrorrhagia with hydrastis and ergotine. Digitalis has the great advantage of its action in producing contraction of the arterioles, and is well given with the

tinctures of aletris, viburnum or hydrastis, and with "ergole"* or sclerotic acid.

With regard to sedatives or hypnotics for the pain of dysmenorrhœa, there is one drug the use of which is attended, especially in that class of patient denominated "hysterical," "neurotic," or "neurasthenic," lymphatic girls or women, subject to neuralgia, spinal neuropathies, or neuro-mimeses, with special danger, namely, morphia. Many women have been made by it confirmed morphiomaniacs. Possessed of a hypodermic syringe and a prescription, they resort to morphia, not only before and during the periods, but in the intervals.† Codeia, exalgin, butylchloral hydrate, with the bromides, may be used as substitutes. If morphia has to be given, it would be better by means of suppository; and, administered in the same way as a hypnotic, trional answers well. The use of an internal remedy may be assisted by depletion and counter-irritation, or any of the numerous modes of applying, either to the abdomen or by the vagina, local sedatives. The most useful pigment that I know of to use over a neuralgic ovary is—Extract of belladonna (2 drms.), camphor (2 drms.), mastich (3 drms.), chloroform and tincture of aconite (of each, 2 ozs.); while in congestive ovaritis, the application of iodine pigment (iodine 1 drm., mastich 1 drm., and rectified spirit 1 oz.) is an admirable counter-irritant.

With regard to the third head of treatment, namely, the operative, such minor interferences as depletion, dilatation, section of the cervix, and the operations of Sims and Dudley, all of which have their special indications, and are relatively valuable according to the congenital or pathological condition present, in the treatment both of dysmenorrhœa and menorrhagia. Dismissing these, there are a few important principles to bear in mind when dealing with dysmenorrhœa, menorrhagia, or amenorrhœa, arising from pathological states of the uterus and adnexa. In the uterus we have most frequently to deal with displacements, hyperplasia, chronic endometritis, interstitial myomata, and intra-uterine fibroma. With regard

* Ergole is a triple extract of ergot, extracted by repeated percolation, and sterilised through a Pasteur-Chamberlain filter.

† *Vide* p. 211, Author's "Diseases of Women and Uterine Therapeutics."

to displacements, while I do not agree with those who say that the days of pessaries are numbered, I believe that the time is rapidly approaching when the radical cure, by Alexander's method, or by vagina or ventro-fixation, will be the rule, and the wearing of an internal support the exception, in all cases of retroversion, in which reposition is difficult and recurrence of the malposition inevitable, without an artificial prop. A pessary in anteversion or anteflexion is generally mischievous. Possibly Galabin's is the least so. In those cases in which division of the cervix by Sims' or Dudley's methods does not relieve, there will usually be found an intramural myoma in the anterior wall of the uterus which demands enucleation. Endometritis, whether hyperplastic, catarrhal, hæmorrhagic, or gonorrhœal, demands thorough and efficient curettage, with subsequent following up of the operation by efficient treatment until complete cure has been effected. Small intramural myomata which are often multiple, and encroach on the uterine canal, may be enucleated by colpotomy. Intra-uterine fibromata, which often escape detection, causing both dysmenorrhœa and menorrhagia, are as a rule easily removable after dilatation, by écraseur or polytome. It is not pleasant to find, after removal of the adnexa for incurable dysmenorrhœa, that all the time it was due to an intra-uterine growth.*

With regard to the adnexa, whether the morbid condition be in the Fallopian tube or ovary, the justification for interference must entirely depend upon the clinical symptoms and signs, the duration and the urgency of the case. While we must not salve our consciences in deciding to operate with what George Eliot so well calls "the damnable doctrine of expediency," which may cover any or every variety of pathological change found in either tube or ovary, neither must we wait with hands folded, looking on at useless suffering, standing expectant for the occurrence of such critical symptoms as will enable us to fall back on the plea of exigency and emergency.

Remembering what I have said in my last article, of the

* Such a case was recorded by Dr. Fancourt Barnes—"Salpingo-oöphorectomy performed for Dysmenorrhœa—Actual Cause discovered to be Intra-uterine Polypus" ("Diseases of Women and Uterine Therapeutics," 8th Edition, p. 401).

various pathological changes in the ovaries which are sufficient to cause intolerable suffering and other symptoms, but are not gross enough in character to be discoverable by bimanual examination, or which seem of insufficient importance to justify interference, it is clear that we must not be always influenced by the size and character of an adnexal tumour. Tuberculous, malignant, endothelial, colloid, sclerotic, and intracystic changes in the ovaries, displacements, thicknesses, obstructions in the lumen, infiltrations into, displacements and twists of the Fallopian tubes, may be present, and yet escape notice. Obvious and gross changes should, in the female genitalia, as elsewhere in the body, be dealt with on broad general principles. Useless and diseased parts should be removed, useful and healthy portions of organs preserved, and, with the comparatively slight risks involved in the modern operations both of colpotomy and laparotomy, especially the former, there is no surgical excuse for procrastination in dealing with conditions that may sooner or later destroy not only an organ but a life. This, however, is a large subject, and I shall have to refer to it again later on.

We may not, as in a case occurring as I correct this proof, say to a suffering woman with an enlarged Fallopian tube and cystic ovary lying in Douglas' pouch, to whom I advised a posterior colpotomy for resection or extirpation, "*postpone the operation, and hope, by rest, etc., you will recover.*" *

NOTE.—Valuable palatinoids are those of "Ergotine and Caulophyllin Comp.," containing Lupulin, Ergotine, Caulophyllin, and Senecin, of each 1 grain. These may be given with apiol in palatinoid separately, 2 minims in each. Another valuable palatinoid is the "Hydrastis and Viburnum Comp.," containing Extract of Viburnum 2 grains, Extract of Hydrastis 2 grains, Extract of Piscidia Erythrina 1 grain.

In prescribing Manganese Dioxide, it should be remembered that it decomposes Ferrous Carbonate in pill, and therefore should not be given in this form in combination with it. Both can be administered separately, yet at the same time, in the palatinoid form.

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* I operated, in the end of 1899, on a case of retroversion of the uterus with disease of one ovary, by salpingo-oöphorectomy and ventro-fixation; the patient had suffered in health for some years—dyspareunia, inability to walk, and general weakness. Pessaries and expectancy had failed; she had the advice of several distinguished gynæcologists. She is now in good health, her uterus normal in size and position, and she has a healthy child.

CHAPTER IV

CONSERVATISM AND ITS INFLUENCE ON OPERATIVE TECHNIQUE

It is perhaps unfortunate that a term which may have such widely different significations should have come to be so frequently used in gynæcology as that of "conservative." To some it carries the inference that those who adopt methods, or pursue plans of treatment, with the object of preserving or restoring affected organs or parts, are opposed to progress, and are more or less stumbling-blocks to advance. Others speak of "conservatism" in surgery as opposed to radical measures, and are not biased by any extremist views against such therapeutical and operative steps as may be, or have been proved to be, calculated to restore the discharge of healthy function. To another class the idea of conservatism conveys the carrying out of principles which tend to save the life, relieve the suffering, and restore the usefulness of the person affected. From this latter point of view the most radical of procedures may be the most truly conservative, and this not merely of the organ or organs affected, but also of the life of the woman. If there be one fact more clear than another that modern gynæcology has established through pathological research, it is this—that the ovary and uterus pass through degenerative changes, from conditions which are benign into those of a malignant type, and that in both these organs we may have the two distinct types coexistent with intermediary degenerative changes. Take, for example, the coexistence of simple adenoma and fibroma with carcinoma and scirrhus, of fibroma with sarcoma and

cysto-sarcoma, of fibroma with malignant adenoma, of medullary cancer with papilloma, of adenoma with endothelioma, of myoma with the peculiar calcareous transformation known as carcinoma psammosum, occurring both in the uterus and ovary. That simple inflammatory processes, beginning either as a form of ovaritis, salpingitis, or endometritis, may originate, under certain constitutional or local predisposing influences (such as the syphilitic taint, or the tubercular diathesis), the malignant tendency, or grave degenerations or neoplasms, is certain. The transitional states noticed in deciduoma malignum (chorio-deciduoma malignum), which ultimately bring it into such close alliance with sarcoma, and the histological evidence of its early relation to a hydatid mole, is another example of this transitional process, met with in the internal genitalia. Carcinomatous changes occur in dermoid cysts of the ovary, and papilloma is not infrequent in oöphoronic cysts, as well as in those of the parovarium. The primary tissue elements, whether epithelial, connective, muscular, follicular, or tubercular, may determine such pathological varieties or complex formations, in both the ovary and uterus. Endometritis assumes the fungoid character, and with this we find sarcomatous invasion of the fundus uteri. Follicular degeneration of the cervix precedes the pre-malignant degenerations of the cervical canal. Syphilis has its relation to hæmorrhagic endometritis, and the latter to sarcoma and adeno-sarcoma, differentiation being, as emphasised by Shaw Mackenzie, most difficult. Hyperplasia of the glandular layer of the mucosa is apparently the first stage in the transition between a benign and malignant change from an adenoma into an adeno-carcinoma. Many times are small polypoid formations, with hypertrophic enlargement of the cervix, the forerunners of carcinoma.

Apart, however, from the consideration of such compound pathological states, or secondary degenerations, we have the assured fact of the occurrence of primary tuberculosis, carcinoma, papilloma, sarcoma, and endothelioma in the adnexa. We are not able, at any rate in the great majority of cases, to discover the nature of such adnexal tumours until the

time of, or subsequent to, operation, and this shows the vital importance of securing, wherever it can be accomplished, the services of a trained pathologist, who shall be at hand to make, at the time of operation, the necessary report as to the character of the diseased tissue in question. This can be done by Ludwig Pick's method in a few minutes, and is the plan followed in most of the large German and other Continental clinics. Doubtless, in most cases of adnexal tumours, by careful examination on their exposure, we may feel fairly confident of our diagnosis of the nature of the morbid change in an ovary or Fallopian tube. Simple follicular, serocystic, hæmatocystic, and pyocystic formations are easily recognisable. The difficulty arises where the blood or pus sac has a papillomatous, tubercular, or endotheliomatous origin or complication. The microscope alone can assist us to a conclusion, and, as regards solid tumours of the ovary, the same statement holds true. It is just in those cases in which we are in doubt as to transitional phases of degenerations in the cervix uteri, or concealed fungosities and degenerations in the fundal cavity, that an examination of different portions of the suspected growth must be made to arrive at an assured conclusion.

Where, then, are we to commence with steps which are termed radical, and where relinquish those which are regarded as conservative? The fact is, the use of both terms, especially in gynæcological surgery, is unfortunate. The development and evolution of twentieth-century gynæcology was marked in its incipient stages by possibly a natural but rather unreasonable suspicion of any step that involved removal of a portion of the internal genitalia.

When ovariotomy for cystoma was regarded as the one justifiable operation—and it has to be remembered that this also met with the most bigoted and determined opposition—it was natural that procedures, amplified out of the originality and example of Battey, and the genius, boldness, and dexterity of Lawson Tait, should have been criticised and tardily accepted. They were performed at a time when the term "gynæcology," as denoting the name of a branch of medical science, was almost unknown, when the school of advance

had in this country but few adherents, when the pathology of the genitalia had been but little studied, when the speculum, some escharotics and pessaries, formed the principal armamentaria of the obstetrician, when the detection of cancer of the cervix uteri sealed the woman's doom, when everything that occurred after a certain period of her life was ascribed to her "change," when the peritoneum was still regarded in the light of a dangerous structure (endowed with fatal tendencies to inflammation and suppuration), when the views on the various forms of ectopic gestation and their treatment, and on other sources of pelvic hæmorrhage, were more or less chaotic, while the term "hæmatocele" covered the appearance of any collection of blood in the pelvic basin, and the mortality, necessarily consequent upon an imperfectly trained technique, was out of all proportion greater than subsequent experience has proved that it should have been. It required that brilliant audacity which is the sister spirit to genius to pioneer the way out of a fog of hopeless empiricism into the clear light of rational clinical methods. Such progress marked the dawn of a new and truly conservative advance, inspired hope in, and restored to useful life, women who had previously been abandoned to a helpless invalidism. It was regrettable, though perhaps unavoidable, that the light in which many contemporaries viewed the advocacy of new surgical principles should have been blurred by mists of certain ethical and personal considerations. We have, however, emerged from a period during which contentious disputation, though delaying for a time the more universal application of such principles as the results of clinical and pathological research were gradually but surely establishing, only gave a more ardent stimulus to a generation of gynæcologists unfettered by inherited bias, to work out on original lines of research and practice a new therapeutics of diseases of women, which should be at the same time both a science and an art.

What, then, speaking generally, is the present attitude of surgeons as regards the conservation of parts that are at the time we see them unhealthy, and which may then demand, or are likely to require in the future, operative

treatment? It may, I think, be truthfully said that the tendency following the swing of the pendulum of reaction, from timorous inactivity to over-sanguine and ambitious interference, has been directed too strongly towards the relinquishment of therapeutic principles and methods of cure other than that of the knife. The more immediate and striking triumphs that followed the use of the latter forced into the background means of treatment which demanded time for their operation, and much patience and self-sacrifice during their application, both on the part of the patient and the physician. On the other hand, a justifiable contempt arose for the universal resort to those panaceas for every pelvic ill, namely, the placing of a woman on her back for an indefinite time, the scalding of the vagina at periodical intervals, the use of what Clifford Allbutt well called "Partington mops of cotton-wool," the wearing of fantastic and imaginary props, and the nocturnal application of medicated tampons. If these were "conservative methods," then was disease often afforded a licence to carry out radical alterations of a character more destructive than those even of the dreaded surgical interference. Still, these and other palliative measures have, in properly selected cases, their indications, and are valuable as alternatives before resort to more active interference, always provided that the pathological conditions it is hoped they will relieve are such as can be cured without operation.

There is nothing in the teaching of present-day leaders in gynæcology that justifies the removal of unhealthy parts that experience has proved may in time be restored to health and the discharge of their normal functions, and certainly nothing to warrant any mutilation of the genitalia, on the assumption of the probability that such removal may be called for in the future. It cannot be denied that the circumstances and surroundings of a patient must frequently influence the surgeon in his decision, not only with regard to the necessity for, but also the nature of, an operation. Special consideration must be given to the woman who is the working and financial helpmeet of her husband, the mainspring of the domestic mechanism, or one whose personal

support is entirely dependent on her physical condition. To such a one, experimental procrastination is disastrous. Insuperable difficulties, both with regard to treatment at home or in hospital, frequently surround her, and she is forced to struggle on under a burden of suffering without any of the alleviating comforts that mitigate it in the case of her wealthier sister. This she does until a crisis arises, either from an attack of peritonitis, pelvic suppuration, dangerous hæmorrhage, or the onset of malignant disease, which gives her no alternative save hospital and operation, under conditions far more unfavourable to recovery than those which previously existed. Thus there must ever be, in different social positions, a large class of women who suffer from diseases of the generative organs which have reached a certain stage, to whom prompt relief by operation affords the only chance, not merely of relief from pain, but of continued usefulness, and, in many cases, of life itself.

Take, for example, the woman who has an old-standing retroversion of the uterus, which supports have failed to cure, or one in whom the uterus can only be kept in a normal position by a pessary. Probably there is some adnexal trouble. A colpotomy with vaginal fixation, or a ventro-fixation, the diseased adnexal tumour being removed, restores her at once to health and usefulness. Another suffers from relaxed vaginal outlet and defective perineal support. There is a partial or complete prolapse, with all the attendant discomfort of the former and misery of the latter, rectocele or cystocele, perhaps both. Operation, according to the degree and stage of the displacement, such as Kelly's for relaxed outlet, colpotomy, and vaginal or ventro-fixation, with colporrhaphy, amputation of the cervix with colporrhaphy and vaginal fixation, and, in the extreme and worst class of case, hysterectomy, effects a rapid and permanent cure. Another is made miserable by incontinence of urine, caused by anteversion and flexion, with an intramural fibroid in the anterior wall. Myomectomy and ventro-fixation give immediate relief. Or there is a small growing myoma causing recurrent and exhaustive hæmorrhage, that

treatment fails to control. Salpingo-oöphorectomy in a large proportion of the cases arrests the growth and checks the hæmorrhage, or, if this step be not taken, ligature of the uterine arteries may bring about the same result. Such operative procedures are truly conservative.

There are others, however, which are commonly thought to be so, yet which may have no claim, but rather the contrary, to be considered as such. Take, for example, curettage. I have already* described a thorough aseptic curettage of the uterus. Anything short of this is on a par with the toxicology of Albert Smith's medical student, who relied on the antidotal efficacy of "scraping the ceiling with a fire shovel" when called in to a case of oxalic acid poisoning. The value of the operation is in many cases not only therapeutic but diagnostic, and the diagnosis can only be obtained by full dilatation, for purpose of exploration and thorough curetting, in view of the subsequent examination of the tissues. Partially completed "scrapings," especially if the operation be not thoroughly aseptic, are dangerous, as only likely to spread the disease, aggravate any pre-existing adnexal trouble, and disappoint the patient by a rapid recurrence of symptoms.

What are the principal conditions for which curettage is indicated, and in which it may be regarded as one of the most valuable preventive and curative measures in gynæcology? There is in many cases of uterine congestion, hyperæmia, hyperplasia, and hypertrophic enlargement, a clear clinical advantage and benefit to be derived from the free enlargement of the isthmus uteri by dilatation. This is the more marked in those cases in which the endometrium is swollen or thickened, and where, as a consequence, accumulation of secretion or discharge, attended often by dilatation, occurs in the cavity of the fundus. Not only is such secretion permitted to flow freely, but the attendant obstruction in the Fallopian tube is lessened, and the flow of any fluid contained in it, into and through the uterus, is encouraged, and a natural exit is thus provided for a discharge that otherwise may cause abscess and peritonitis. Curettage, in addition, relieves uterine stasis

* See Chapter I.

lessens local congestions, reduces general hyperæmia, anticipates general or local hyperplasia, and consequently prevents neoplastic formations in the tissues. Further, by the entire operation contractility both in the oviduct and uterus is excited, and absorption and resolution generally in the pelvic organs are promoted. Add to these results, that sterilisation of the entire uterine cavity is effected, if the operation be properly completed, and, should the adnexa be not previously involved, the spread of infective processes through the passage of micro-organisms into the tubes is arrested. These remarks apply to that large class of cases included under the various forms of metritis and endometritis, especially the chronic suppurative, hypertrophic-glandular, and hæmorrhagic. It is in the chronic suppurative types that the value of accompanying antiseptic treatment by the application of chromic acid after curettage ($\frac{1}{2}$ to 1 drm. to the ounce), followed by the packing loosely of the uterine cavity with sterilised iodoform gauze, is seen. This is renewed at intervals when the cavity is wiped out with a perchloride of mercury solution, 1 in 5000, the vagina being also tamponned with chinosol or perchloride gauze.

I have had several striking cases of complete recovery from old and intractable suppurative states of the endometrium, associated with salpingitis, treated in this manner. In some, subsequent dressings with iodised phenol and ichthyol or other antiseptic and astringent preparations, have been used. Equally so, curettage with the chromic acid treatment has cured long protracted and obstinate cases of hæmorrhagic endometritis, there being no malignant degeneration present, but the curettings showing inflammatory infiltrations, vascular extravasations, with hypertrophic and dilated glandular tubules. Another class of case, in which curettage has also yielded me admirable results, has been that in which morbid growths, having no distinct pathological character, but rather of a transitional nature and of a mixed type, have been discovered in the cavity of the body or in the cervical canal. Some such growths are present in the condition known as endometritis fungosa, and may be, as Heitzmann has shown, either of a proliferating glandular

character, with a hyperplasia of the adenoid or lymph tissue of the mucosa, or associated with myxomatous tissue changes between the tubules, with the formation of myxomatous or fibro-myxomatous polypoid growths which are at times cystic. I have removed such fungus growths on different occasions, and watched the cases subsequently with considerable anxiety, fearing further degenerative processes of a malignant nature. Some have had the appearances of adenoma; in others, the connective tissue changes have been myxomatous; or, again, the pathological report has indicated epithelial proliferation, irregularity of the uterine glands, and their infiltration with cells, and in some instances the growth has tended to a distinctly papillomatous type. Years have passed since many of these patients have been curetted, and there has been no recurrence. In decidual degenerations, not of the sarcomatous type, secondary to abortion, curettage is eminently successful. In so far it is truly conservative. In pronounced degenerations and growths of the malignant type, or in tuberculosis, it is frequently the reverse, and is often followed by rapid increase and spread of the disease, thus reducing the chance of performing a complete and successful hysterectomy, a consequence which only emphasises the extreme importance of a rapid histological examination, either at the time of the curettage, or as soon after as possible. Should the clinical symptoms strongly lead to the suspicion of carcinoma, sarcoma, malignant tumour of the chorionic villi (deciduoma malignum), or tuberculosis, vaginal panhysterectomy is *the true* conservative operation. Where there is suspicious erosion of the cervix, extensive follicular degeneration, or intracervical growths, while the adnexa are free from disease, curettage of the uterine cavity, followed by amputation of the cervix, is the safest step to take.

Touching on the question of carcinoma, the time has passed for discussing any but one conservative step. This resulted from the exposure of the myths with regard to the limitation of malignant disease, and when the various vascular and lymphatic avenues by which the disease is disseminated were recognised; when it was seen that the cancer elements of the portio vaginalis invade the tissues much more deeply

than appears from a superficial examination, and that the direction of the growth laterally tends to early invasion of the parametrium and adnexal structures; when statistics prove that cancer rarely, if ever, originates from the peritoneal lining of the uterus, and comparatively rarely from the Fallopian tubes; when it was clinically recognised that while the cervix is the part of the uterus so much more frequently attacked, and that while the tendency of the disease is to spread downwards towards the anterior vaginal wall and base of the bladder, it also spreads upwards and invades the body; when cancerous foci were found in the fundus coexistent with primary carcinoma of the cervix, though there may be no structural change in the intervening tissues—it became evident that malignant disease of the uterus, of any type, by every surgical principle demanded early and complete removal of the organ and its appendages.

The less we hear of minor operations for malignant disease of the uterus, the better. Amputation, infra- or supra-vaginal, of the cervix, the galvanic écraseur, the thermocautery, or chloride of zinc, and other alternative means for checking the disease, may be considered in cases where operation is contra-indicated, or in dealing with pre-cancerous conditions, but they are the very reverse of conservative if resorted to where there is still time to go wide of the disease before the muscular tissue of the uterus has become seriously involved, and the lymphatics, or the pelvic glands, are infected. Here the course to follow, when the presence of malignant disease in either cervix or body is assured, is vaginal panhysterectomy, performed in whatever manner the surgeon prefers; whether by the well-known methods of Auguste Martin, Schauta, Doyen, or Howard Kelly, it matters not, so long as there be thorough previous disinfection and curettage of the uterine canal, and the extirpation be complete. Unfortunately, cancer is too often permitted to advance so far as to preclude the possibility of safe and satisfactory removal, and the case is seen when the structures in the floor of the pelvis are engaged, the base of the bladder or rectum involved, or the broad ligaments and adnexal organs infiltrated. If interference be determined upon, under any of these conditions, the abdominal

route is that of selection, as affording the only chance for enlarging the field of operation, thus including not only the broad ligaments and the adnexa, but also, as far as possible, any enlarged iliac and lumbar glands. This operation is known as the Reis-Rumpf-Clarke, and is fully described by Howard Kelly in his work on operative gynæcology. The operations of Olshausen, Duhrssen, and Martin, the latter of whom has removed the entire vagina with the uterus and ovaries in a case of carcinoma, are not likely to be often performed, and the conditions under which they are justifiable must be very rare.

There is one condition bearing on carcinoma of the cervix which touches the subject on conservatism, and is of practical importance. That is the presence of laceration of the cervix, as a predisposing factor to the disease. There can be no doubt that anything like an extensive laceration is frequently associated with other morbid states, either coincident or consequent. With it we find subinvolution and hyperplasia, endometritis, erosions, and polypi, and follicular degenerations. Of none of these can it be said that it may not be a predisposing factor in the etiology of malignant degeneration. Therefore, apart altogether from any subjective symptoms caused by the tear, or its secondary effects on the adnexa, it is safer and wiser by such a simple operation as that of trachelorrhaphy to exclude any direct or indirect influence that the lesion may exert as a predisposing factor in the causation of malignancy.

It may be truthfully asserted that the greatest difference of opinion amongst gynæcologists has been over the grounds that justify removal of the adnexa, and there is still a small minority who would exhaust every palliative step before advising operation. Alternative measures, such as curettage, galvano-caustic applications, vapo-cauterisation, ignipuncture, aspiration, puncture and incision of abscess and pus sacs, and the various conservative procedures known as salpingotomy, salpingorrhaphy, salpingostomy, and salpingostrhaphy, practised with the object of exsecting portions of the diseased tubes and ovaries, as well as restoring the patency of the lumen of the tube, have been proposed and carried out. And the

present-day tendency is decidedly in the direction of not sacrificing an ovary or tube which can be reasonably expected to be preserved with safety to the woman.

When an adnexal tumour is discovered, producing such symptoms as pain, difficulty in walking, sleeplessness, occasional attacks of pelvic peritonitis, and possibly attendant bowel or bladder troubles, with or without an associated uterine affection, the question of removal immediately arises. Both adnexa may be affected, and the necessity for removing both has to be considered.

In the great majority of cases we have to deal with one or more of these conditions: hydrosalpinx, pyosalpinx, hæmatosalpinx, serocystic or pyocystic ovary, or a solid tumour of the ovary, benign or malignant, blood cysts of the ovary, or cysts of the parovarium, and to these we may add swellings, cystic or otherwise, due to ectopic gestation. All of these are palpable tumours, varying in size, position, connection with other organs, extent of adhesions, and nature of growth or character of contained fluid. I think it will be generally admitted, that in the majority of cases their removal is demanded on grounds both of comfort and safety. There are tumours which always demand removal. These are—the solid tumours of the ovary (whatever may be their character, benign, malignant, or tubercular), and growths in the tubes of a tuberculous, carcinomatous, or papillomatous nature, and in hæmatocele due to rupture of the tube in tubal or tubo-ovarian ectopic gestation. There is a second class, where the interstitial changes in the ovary or tube are not so palpable to examination, nor does the increase in size of either bear any proportion to the pain and other symptoms complained of. We have examples of this in the condition of ovary known as cirrhotic, and in general cystic degeneration of the ovarian follicles, with interstitial thickening and hardening of the tunica albuginea; in the Fallopian tube in primary malignant conditions, tuberculosis, and nodular salpingitis. In some of these diseases, where an early and correct diagnosis is possible, removal is clearly indicated. In others, as in follicular degeneration and partial sclerosis of the ovary, palliative remedies may relieve, and pain may cease, or, on exploration

of the ovaries, resection of the diseased portions may be feasible. In a certain proportion of cases in which the tumour contains serum, pus, or blood, and in simple cysts of the parovarium, puncture, followed by enlargement of the opening with a branch dilator, and antiseptic treatment of the cavity, carried out with every aseptic precaution, is sufficient. In others, exploration by anterior or posterior colpotomy, evacuation of the cystic contents, removal of the cyst wall, puncture of cystic follicles, resection either of the ovaries or tubes, will suffice, and the need for removal is obviated.

Still, when the most successful results of medicinal therapeutics, whether by the internal administration of medicines, various medicated hydropathic courses, and local absorbent applications, are accorded their fullest curative value, it has to be confessed that these are not very encouraging, and that many patients drag on with but little benefit. They are for an indefinite time encouraged by periodical intervals of comparative freedom from pain, and temporary restoration to health, to hope for permanent cure, until at last either the sudden development of acute symptoms or the increase in size of the adnexal tumour compels operation, at a time when the long-continued pelvic disease, complicated by adhesions of the viscera, more or less difficult to separate, and possibly purulent infiltrations, render operation all the more difficult and dangerous. Nor is this all, for it must be the experience of every surgeon that complete recovery after such operations is oftentimes more protracted, and, in the case of those who have to move about soon after their performance, the immediate benefit from the operation is not secured. As a distinguished woman gynæcologist and pathologist (Mary Dixon-Jones) well says: "The policy of delay works badly in every way. Women continue to be invalids, many die from intercurrent attacks of peritonitis, and those who live on, do so with lessened chances of recovery when they submit to operation, and greatly increased risks of but partial restoration to health."

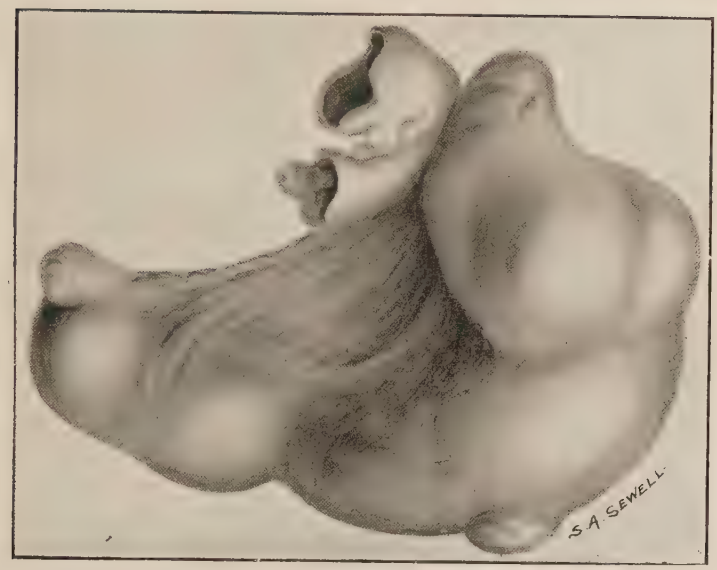
To wait to perform an operation of which the mortality, taking all cases, good and bad, is not more than some 3 per cent., whether by laparotomy or colpotomy, until tumours have so increased in size as to partially fill the pelvis,

pressing on adjacent viscera and interfering with locomotion; until large cysts full either of pus or blood become embedded in surrounding infiltrations, rendering their removal without rupture almost impossible; until tubes are greatly thickened and enormously distended—is to delay until a patient's life is imminently threatened, if not sacrificed, by a rupture of such death-traps which she has been encouraged to carefully nurse with the delusive hope of their ultimate disappearance, while friends have been attributing her sufferings in great measure to nervousness and hysteria.

Dismissing, then, as entirely outside the question we are considering, the justification of oöphorectomy for any form of psychical or neurotic disturbance, and in all cases in which there is no other manifestation than that of pain, we must in the face of our present knowledge arrive at the conclusion that his responsibility is far greater who hesitates, or refuses to remove diseased adnexa and adnexal tumours, than that of the surgeon who, either by exploration determines their nature, or, being convinced of their danger, advises their removal. (Plate X*a*)

As to the route by which we proceed, abdominal or vaginal, this must depend upon the conditions present, the position, size, and adhesions of the tumours, the amount of infiltration, the determination to perform conservative operations, or to remove the uterus, or, if necessary, perform vagino- or ventro-fixation, or myomectomy. Individually, I would select the abdominal route for the majority of adnexal tumours, especially those in which I had any doubt as to facility of removal by colpotomy. I am influenced by the better view of the field of operation, comparative facility of manipulation, and completeness of removal. On the other hand, where there are simple cysts in Douglas' pouch, or solid tumours of the ovary of a size suitable for removal by colpotomy; where vaginal fixation is decided upon when adnexal tumours are present; in pelvic swellings in which, from their nature and position, vaginal exploration is obviously the safest step, and in the cases in which vaginal hysterectomy is also called for and applicable—the vaginal route is the one that I should prefer.

PLATE Xa.



TUBERCULOUS PYOSALPINX.

Mrs. ——, aged 22, seen in consultation with Dr. Disney, January, 1901. Married 2½ years. Had one child at the end of the first year. Catamenia regular and normal. Complained of considerable pain in the left side and inability to walk, also dyspareunia. On examination I found the left adnexa, both tube and ovary, much thickened and enlarged, and extremely sensitive. The right also adherent. I advised immediate exploration by colpotomy or abdominal cœliotomy, with removal of the adnexa if necessary. She was seen a day or so following by a distinguished Obstetric Physician, who counselled rest and a course at Woodhall Spa, etc. I did not see this case again until July 10, 1901, the day before I operated on her by abdominal cœliotomy. Dr. Charles Noble of Philadelphia was present. I found the left adnexa in the condition described in Mr. Targett's report. The right ovary, further than being involved by some adhesions, was healthy.

At the operation there was a large cavity filled with serous fluid (perimetric cystoma) formed behind the mesosalpinx, and between the distended tube, the ovary, and the adjacent viscera.

"The Fallopian tube is distended with pus and forms a long crescentic swelling an inch and a half in diameter at its widest part. The surface is covered with adhesions in which are embedded many miliary tubercles."

[*To face p.* 78.

One ethical point may warrant a passing notice in regard to the attitude we have to assume to patients when the removal of the adnexa is in our opinion demanded. Nothing can be taken for granted, and it has to be insured that the patient is aware, not only of the maximum risks of operation attending her particular case, but that her *verified* consent be given that what is necessary to be done shall be done, in full view of the consequences. It can be pointed out to her that, otherwise, she may have to undergo a second operation in the future, with its attendant risks, the only alternative being that anæsthesia be arrested in order to obtain her consent at a time when she would be least capable of arriving at an independent decision as to the wisest course for her to pursue.

The other contentious subject, in which the idea of conservatism has played an important part, is that of the early removal of myomatous and fibromyomatous tumours of the uterus. I enter into this subject fully in a subsequent chapter.

CHAPTER V

AFFECTIONS OF THE FEMALE GENITALIA AS CAUSAL FACTORS IN THE ETIOLOGY OF NEUROSES AND INSANITY, AND THEIR SPECIAL BEARING ON THE OPERATIVE TREATMENT OF THE INSANE

When I determined that this subject should form one of this short series, I did not anticipate that I should have in part to discuss it beforehand. Invited, however, to do so in the Psychological Section at the meeting of the British Medical Association at Ipswich, I then dealt with several incidental considerations—physiological, pathological, and psychological—necessary to clear the ground in our endeavour to arrive at reliable conclusions, so far as our present knowledge enables us, on certain questions of extreme interest both in psychology and gynæcology, as touching principles of practice in both these departments of medicine and surgery.*

It was an easy task to show that intimately associated with certain problems in psychiatrics are others which require for their elucidation the observation and research of the gynæcologist. For this purpose we have to go no further than the psycho-physical, psycho-physiological, and psycho-pathological phenomena attendant upon the act of ovulation and its expression in the menstrual discharge, as they are made manifest, not only during abnormal, but also in normal, menstruation. Also, interferences in any part of the cycle of metabolic phenomena, which, combined, constitute a complete menstrual period, have so often correlated with such disturbances varying

* *British Medical Journal*, September 22, 1900; also valedictory address to the British Gynæcological Society, January, 1900, "The Correlation of Sexual Function with Insanity and Crime" (*British Gynæcological Journal*, February, 1900).

shades of disordered mentalisation, from the slight and almost imperceptible deviation from health, to those more pronounced interruptions of the mental equilibrium which bring us to the borderland of insanity, if not to the ideas, impulses, and actions of the completely disordered mind. Such psychical and psychopathic associations or sequences have their anatomico-physiological explanation, through the various lymphatic, vascular, and nervous supplies and distributions of the sexual organs involved in the process of ovulation. We have then also present that condition of nervous exaltation in which reflex action and morbid reflexes are easily excited, and when abnormal manifestations, both motor and sensory, are present. The physiological and psychical influences operating during the developing years of adolescence, and at the climacteric period of life, tend in the first case to such disorders as epilepsy, chorea, suicidal promptings, persecutory delusions, distorted sexual impulses, and more particularly in the latter to the various delusional states attendant upon melancholia or dementia which are then met with. Common among these are those morbid ideas of a sexual nature connected either with the woman herself, or others having relation to her married state. Such terminological divisions in the classification of insanity as "masturbational," "ovarian," "climacteric," "old maids," show the recognition by psychologists of such influences. We are not now considering such morbid mental conditions as are consequences of pregnancy, labour, and lactation. These phases of adolescence and the menopause are, as I have said elsewhere, weaker links in the chain of the woman's life, which, when its strength is tested by any exceptional strain, either by the influence of the environment of her social position and surrounding circumstances, her calling, or accidental occurrences, yield through some pre-existing flaw, and the sudden snap ensues.

At these times predisposing factors, transmitted by heredity, combine to generate, evolve, and crystallise certain psychopathic tendencies and impulses, which are released by a weakened inhibitory will-power and ineffective nerve-control. In the less pronounced of these disturbances we are accustomed to include such morbidly impressionable conditions, in which

are hyper-sensitiveness to pain, neuroses of the viscera, of the respiratory, circulatory, or digestive systems, and the temporary exaggeration of some or all of the temperamental traits which distinguish the individuality of the woman, such as greater excitability, unaccountable fits of depression, irascibility, or lethargy. And we employ to such mental types and nervous characteristics the terms neurasthenic or neurotic. A stage further, and we regard the state as one of hysteria, with which possibly we have allied that of hypochondriasis. And with regard to this class of case, in which there is not any pronounced mental affection, it is to be regretted that the subjects of such nervous disorders have their mental symptoms generally regarded either with indifference or suspicion by advisers and friends alike. Frequently it happens that they are practically ignored, while excess of attention is paid to the visceral affection, pelvic or other; or, on the other hand, undue importance is given to them, at the cost of disregarding the source of some reflex disturbance which may be the principal factor in causing the mental instability. As Dr. Urquhart well puts it, "the nervous system in slighter or incipient cases may be but slightly affected, and it is in regard to these less marked cases that special study is so much required. The neglect of careful observation and investigation, in the light of recently acquired knowledge, is much to be deplored. Asylum physicians seldom see the beginning of mental disorder, and although they have asked for information little has been forthcoming."* He further says: "I am one of those who see no real fundamental difference between mental disorder of the technical legal kind and neuroses. They are all part and parcel of the same inherent defect. We cannot narrow our view to the mere facts of disordered mentalisation; we must consider the influence and relations of environment, of such conditions as gout and rheumatism."

Dr. Barraclough, late of the Wilts County Asylum, in a reply to me, says: "On this point I must speak with no uncertain sound. In my opinion the neurotic temperament is almost as much a predisposing factor as is insanity itself.

* Communication to the Author.

Very frequently, when the most careful search cannot detect any trace of family insanity, an interview with the parents is sufficient to show whence the inherited tendency lies. I have one case under my care at the present moment who is now hopelessly insane, and who has no family history of insanity, but whose parents are both extremely neurotic, especially the father, and one of whose sisters is very hysterical." He quotes another case of a similar nature, and goes on to say that it would almost appear that psychopathic predisposition and neurotic temperament are cumulative in their effects, as they are transmitted from parents to offspring, and must ultimately terminate in insanity in the most highly unstable of their descendants. Dr. Rooke Ley, of the Prestwich Asylum, in writing to me of his experience of the influence of derangements of menstruation in the causation of mental disorder, lays particular stress on neuropathic heredity as the main point to be considered in relation to such disorders occurring at adolescence, and considers that such "psychopathic predisposition and neurotic inheritance play a very large part in the causation of disordered mentalisation . . . and that the local affection lights up as it were the inflammable material ready for a suitable torch." And if we take the opinions of gynæcologists generally, we have the same view strongly expressed that psychopathic predisposition is nearly always present when we find a disorder of menstruation or an operation on the sexual organs causing alienation. Thus Professor Schauta says, in a correspondence I have had with him, that he thinks "that there is always some predisposition present, and that he never saw in healthy women a disturbance of mind after operation." He gives me the particulars of two interesting cases of suicide as supporting his opinion. In one case, following a laparotomy for a right adnexal tumour, and, subsequently to this, the removal of a small polypus from the uterus by the vagina, the patient attempted suicide by chloroform, having completely recovered from both operations. A year afterwards a myoma of the uterus having rapidly advanced, vaginal hysterectomy was performed, from which she recovered completely, but she finally succeeded in committing suicide. She had always been

of a neurotic temperament, and her nervous condition was aggravated by unhappy marital relations. The second case was that of a lady who had a very small fibroma of the vagina, causing no trouble. She was advised that the tumour should be removed. Professor Schauta expressed a different opinion, and no operation was performed. Being a neurasthenic woman, she became possessed of the idea that she was incurable, and delusions followed. She finally committed suicide by strangling herself. I have myself known two cases occurring during the menopause; one of attempted suicide by cutting the throat, the other successfully carried out by drowning. The first had a uterine growth, which I removed; the second suffered from prolapsus uteri. Both had been all their lives looked upon as neurotic, but not as in the least mentally unhinged.

Professor Martin (late of Berlin) says that his experience teaches him that "healthy women do not run the risk of insanity from their sexual organs, nor are they endangered as to insanity by operations upon them. Only by the presence of an abnormal mental condition do menstruation, gestation, or operations on the sexual organs cause mental instability or temporary insanity; and such complications as pain, acute or chronic anæmia, with general prostration and neurasthenia, add to the risk." * Robert Barnes has expressed the opinion that an antecedent nervous condition as a predisposing factor is present in those cases of nervous derangement in which there is disorder of the sexual functions.

Nor are the transmitted physical abnormalities of the sexual organs to be overlooked as factors in this psychopathic predisposition. For example, of nine cases of insanity recorded in the Vienna *Irrenanstalt* (1882-1893), operated upon by Professor Schauta at the *Landesirrenanstalt* (four of whom were cured and one improved), in three cases the uterus was very small and imperfectly developed. The association of the neurasthenic temperament and neuroses with abnormalities of the uterus, such as ill development, elongated cervix, congenital stenosis, and infantile uterus, is well known.

* Letter to the Author.

These views express generally the opinion of the majority of psychologists and gynæcologists whose great experience I have drawn upon, and they are those which are endorsed in the writings of such well-known authorities as Clouston, Hack Tuke, Hyslop, Savage, Bevan Lewis, and others.

Herein we meet with the first difficulty in the differentiation, etiologically, of cases of mental disturbance in women in whom a sexual disorder is suspected or discovered. By critical inquiry into the family history and personal temperament or peculiarities of a patient, we may satisfy ourselves as to the part played by heredity, not forgetting the subtle transmissions to the individual through atavism, and thus separate the class of case in which psychopathic factors have prepared the soil for the germs of a mental affection from that in which a sexual disorder appears to act primarily and directly as the exciting cause of the disturbance. Thus, as Claye Shaw well insists, we begin by recognising the dual nature of sexual delusions—those that are purely mental without relation to the sexual organs, and those which have their origin in the latter; uterine or ovarian disease is commonly present without insanity; or a sexual form of insanity exists without disease of the genitalia; or insanity exists without sexual delusions; and, lastly, I may add, that various disorders of mentalisation appear to have a distinct relation to diseases of the genitalia. Obviously, it must be most difficult, often impossible, to differentiate between these classes, and no satisfactory conclusion can be arrived at in a proportion of them, without a careful psycho-gynæcological examination. How far such dual examination may be advisable will depend upon such considerations as the age of the patient, the history of previous sexual disorder, and the signs, positive and negative, as well as the symptoms which may be present, of a pathological or physiological nature, indicative of a sexual affection. In the young adolescent our great difficulty is to determine whether the aberration in ovulation is not the consequence rather than the cause of the mental condition; as Dr. Yellowlees, writing to me, says, "there can be no doubt that the amenorrhœa is as often the result of defective nerve conditions as their

cause." "Derangements of menstruation," remarks Dr. Rooke Ley, "do act as potent causes of insanity, but to a much less extent than some observers maintain; but they—especially amenorrhœa—are more often the result rather than the cause." Instances of such disturbance of mentalisation during adolescence are amongst the most frequent that the gynæcologist meets with, though not uncommonly the mental specialist is the first, if not the only one, under whose observation they come. I have elsewhere quoted the cases of two sisters in a family of seven, both of whom during adolescence developed symptoms of insanity. In one there were suicidal impulses and typical delusional insanity, in which the religious element was largely apparent. In the other, excitement, incoherence, apprehensions, and inexplicable dislike of her parents and others, mingled with decided sexual manifestations, occurred. Both had been quite healthful up to the time that irregularity and suppression of the catamenia appeared. Then both gradually developed these symptoms. There was not, at either side of the parentage, any hereditary history of insanity, but there was tubercle on that of the father. All the other members of the family were and are healthy. The father and mother had both more than ordinary intelligence, and were in no wise neurotic. I had a suspicion of masturbation, but nothing more. One sister, the elder, was remarkable for her quickness and powers of memory, but was nervously constituted; the other was a bright, smart girl and physically strong. I had them both under my care throughout their illnesses. The catamenia were eventually quite restored; they are now physically and mentally sound. Here I have no doubt that whatever may have been the underlying predisposition, the amenorrhœa was the exciting cause of the mischief. I need not say that no gynæcological examination was made in either case.*

I have just seen an accomplished young girl, æt. 21, whose health was good, with the exception of erratic menstruation, amounting within the last few years to almost

* Since this was written one of the sisters has again developed symptoms of menstrual insanity.

complete absence of the catamenia. There were no mental symptoms whatever until within the last six months, when she has had to abandon her musical studies on the Continent, and is now on the verge of melancholia. Her depression is mingled with various apprehensions connected with the absence of the catamenia, and accentuated by some unpropitious predictions of a palmist. An examination being desired, I found a curiously fiddle-shaped uterus, the vaginal cervix being normal in size, but separated from the fundus by a contracted portion, over an inch in length. Hitherto no remedy has had any effect, and she is about to undergo an electrical course and Weir-Mitchell treatment. Here again, should insanity ensue, there can, I think, be no doubt as to the part played by menstruation in its causation. In this case the mother was of a distinctly neurotic temperament.

I take this excerpt from a letter before me. It is from an intelligent schoolmistress, æt. 30, who lately consulted me for amenorrhœa. ". . . Ever since the check occurred I have had a dreadful sensation in my head and eyes, which makes my mind feel a blank, and I forget things. This is the most inconvenient result. . . . For two or three months before this happened the period had been in better order than it had for some time. . . . If I cannot obtain relief soon, I am afraid I cannot bear to live much longer."

I recently operated upon a young lady, æt. 23, who was greatly emaciated, weighing only 84 pounds when I saw her. Menstruation had ceased some few years previously, and gradually she had become neurasthenic, suffering from fits of depression and hysterical outbursts, her mental condition being decidedly enfeebled. On examining her under an anæsthetic, I found a congenitally small uterus, one apparently healthy ovary, and a small right ovarian cyst, which accounted for the pain complained of at this side. Having improved her general condition by feeding and rest, I removed the right cyst, resected the cystic left ovary, and then placed her under regular Weir-Mitchell treatment for some weeks, at the end of which time she was so improved, both mentally and physically, as to be hardly recognisable as the same girl. Here, the sexual disorder had a pathological source.

While one could multiply examples of many such cases, I think that those are even more numerous in which associated physical and mental weakness or distinct psychopathic manifestations of a pronounced nature have *preceded* the menstrual irregularity and interfered with the process of ovulation. In the great majority of young patients, however, we meet rather with varying aspects of neurasthenia, phases of epilepsy, chorea, hysteria, and visceral neuroses, neuralgias, and disorders of the special sense organs, and peripheral and central reflex irritations.

So far as masturbation is concerned, we are confronted with somewhat the same difficulty. Is it the cause or the consequence of the nervous and mental perturbation? There can be no doubt that heredity here again plays an important part in the tendency to and persistence of the desire. Some victims are such by congenital transmission, and in these adolescents it is doubtful if they are ever completely cured and saved from nymphomania, save by the legitimate call on the natural physiological response that alone healthily satisfies the sexual impulse. I have known several instances of women who had no immoral tendencies whatever, whose minds, in regard to all their worldly relations, were stable, active, and intelligent, who commenced, unwitting as to its evil or pernicious nature, the practice of self-abuse, and who persisted secretly in the habit during adolescence without its producing any apparent ill effect. A notable instance of this I have in mind, of an unmarried woman who had done good public work, and who did not realise what the consequences of the practice might be until, accidentally reading of these in a work on gynæcology, she determined to consult some one on the subject. I saw her, and found that the power of resisting the impulse was lost. Having assured her of my belief that I could cure her, under cocaine I freely cauterised the clitoris and the surrounding sensitive area with the galvano-cautery. The effect was, that she abandoned the habit, and her will-control over it was permanently established. A brother of this patient died in an asylum of general paralysis, and a sister of cancer. The mental distress which followed upon the discovery of what she feared was an

incurable propensity was great, and would, I doubt not, in view of her deeply emotional and religious nature, have probably led on to a condition of morbid religious exaltation. In relation to the congenital nature of morbid sexual instinct, it has to be remembered how early this is developed in some females. A fashionable society woman whose sexual proclivities were in her own case fairly strongly marked, consulted me about her little girl of 5 years old, not only for the habit of self-abuse, but also because it was impossible to leave her for any time in the company of male children. From what I know of the subsequent history of the case, I fear that the sexual morbidity has never been lost, though the girl has grown into robust and healthful womanhood. While I have seen masturbation associated with every type of neurosis, and believing it as I do to be a potent factor in the causation of such, and in the evolution and development of psychopathic propensities, to the extent of unnatural indulgences, I have not known any case in which insanity could be traced to this source alone. The presence of some such vice amongst the insane is frequent, but the vicious propensity occurs as only one of many morbid evidences of the neurotic temperament and disposition, from which, at the period of developing sexual excitations, it springs. Should such disturbances as melancholia or dementia arise in these women, the vice, by its general influence, both physical and psychical, may help to encourage or perpetuate some delusional or melancholic condition, and render its cure, if the habit be persisted in, all the more difficult. In the case I quoted it was not the effect of the cauterisation that effected a cure, so much as the influence on the patient's mind of the assurance that it would do so, and the time afforded for her will-power to assert itself.

Taking these facts into consideration, it is apparent why clitoridectomy has frequently failed to effect a cure of affections which are supposed to be the consequences of masturbation. The morbid reflexes in the great majority of these cases have a central and not peripheral origin, and in most of those in which morbid peripheral excitations are present, they are secondary consequences of the general state of

neurasthenia, hysteria, or hystero-neurosis, present. The operation can at best, under such circumstances, be experimental, and the after-effects on the woman's mind may make her last state worse than the first.

The vital lesson learnt, both from the etiology and development of pubescent insanity, so far as the young female is concerned, is that the children of neurotic and mentally unstable parents, of too early marriages, of blood relationships, and of alcoholics, require special care and judgment in their companionships, amusements, and occupations, and in the general watchfulness of their tendencies, habits, and mannerisms. And inasmuch as in these we are far more likely than in others to meet with disorders of menstruation, as well as practices of self-abuse, and further, inasmuch as the years from 18 to 25 are those which furnish the greater number by far of insane inmates of asylums, amongst whom amenorrhœa and dysmenorrhœa are very common complications, it is essential, if we would prevent the more serious developments of morbid mentalisation, that their earlier, and oftentimes subtle, warnings should be recognised. It is unfortunately only too often the case that those traits of character which are ascribed to some peculiarity of disposition or temperament are in reality the first beginnings of a morbid train of ideas, which eventually terminate in a mental breakdown. More likely is this to occur if there be some sexual fault, some error in function, or congenital or pathological abnormality in the generative organs. Though in numbers of cases no prevision nor preventive precautions can avert the mental catastrophe, yet will our recompense be sufficient, even if we can save one life from the stamp and doom of lunacy. Be it noticed also that it is often the brightest, quickest, and most apt in games and accomplishments during growing youth who succumb during adolescence to those predisposing influences of inherited tendencies, passions, and apprehensions which are the forerunners of delusional insanity.

There are questions bearing upon the entire subject which are worthy of a moment's consideration, some of which, in the present state of our knowledge, it is difficult to arrive at

a precise conclusion regarding. These are—(*a*) What are the indications for a gynæcological examination of women who are suffering from any form of mental aberration, and under what circumstances is such examination of an insane woman expedient and justifiable? (*b*) Is operative interference in cases of pathological changes in the genitalia of insane women justifiable, and under what circumstances? (*c*) Do operations on the female genitalia specially predispose to post-operative insanity, and in what cases is such predisposition most likely to be manifested? Also, do operations on the genitalia of insane women tend to aggravate the mental symptoms?

The following conclusions were those which I put forward in the paper I have referred to. I desire here to amplify some of these, and to deal with the evidence which has led to them.

1. Where, in an insane person, ovulation and its external manifestation, the menstrual discharge, are absent or erratic, the erraticism or absence may be a consequence of the general and insane condition, and not a causal factor in its production; but under any circumstances such abnormal menstruation appears to have an aggravating effect on the insanity, and there is sufficient evidence to strengthen the belief that when such irregularity exists—especially if it be due to a pathological cause—it should be treated therapeutically or by operative measures.

2. The question of a gynæcological examination of an insane woman must be a matter for the discretion of the psychologist, influenced by the gynæcological view as to its expediency from the signs and symptoms present in the sexual organs. For many reasons, as a *universal* practice, in the present state of our knowledge it is not warrantable.

3. Sufficient evidence is now advanced to justify the removal of the adnexa or tumours of the uterus in insane women, when there are gross lesions of the former or tumours of the latter. Here, again, such operations must be advised according to the psychological condition of the patient and the type of her insanity.

4. From a mass of evidence, including some of the largest experiences in Europe, Canada, and America, it does not appear that there is in healthfully minded women, who suffer from diseases of the genitalia, any special risk of post-operative insanity. On the other hand, if there be a psychopathic predisposition, which has existed prior to and independently of the sexual disease, there is in such cases a larger percentage of post-operative mental disturbance than follows other operations. In such women the prudence of a radical operation may have to be carefully discussed. The post-operative mental effect does not appear generally to be of a serious or permanent nature.

5. It may be generally affirmed that when mental disease of a graver type follows upon sexual disorder, there has been in the woman affected an underlying and often unrecognised psychopathic predisposition ; the disorder of menstruation or the disease in the genitalia completing the chain of the vicious circle needful for the final manifestation of the mental condition.

6. The relation of aberrant sexual function or a disorder of menstruation to any criminal act ought to be taken into consideration in determining the responsibility of the woman.

It is well to keep quite distinct that numerous class of cases with which we are all familiar, where an absence, diminution, or exaggeration in the genital function, whether associated or not with some congenital or pathological condition of any of the organs, is attended by some abnormal reflex excitation of one or more of the viscera, or a peripheral irritation in a special sense organ, such visceral neuroses and reflex disturbances, with their attendant vasomotor and vascular changes, being the more prominent troubles for which advice is sought. It is not uncommon to find some phase of neurasthenia, hypochondriasis, or mild type of melancholia present, and, speaking generally, the neurotic temperament. All these various hystero-neuroses have been frequently written about since Tilt in England, Fordyce Barker and Engelmann in America, Shroeter and Hegar in Germany, insisted on their dependence upon some uterine or ovarian affection. Out of 500 private cases taken by me consecutively, suffering from various affections of the genitalia, 270 exhibited symptoms of such conditions, and of these 147 suffered more especially from disorders of the nervous system. Out of the entire 500, however, thirteen only showed any graver mental disorder amounting to insanity. This gives us a little over $2\frac{1}{2}$ per cent. of women who had various affections of the genitalia, who were insane. This analysis was made several years since, and my subsequent experience confirms me in the conclusion that only in a small proportion of women does the alienation assume the graver types of melancholia, mania, or dementia. It has, however, to be remembered that a large number of women find their way into asylums who have never consulted a gynæcologist, yet who suffer from various diseases of the genitalia, and disorders of

menstruation. And this fact will of course largely influence any conclusion arrived at from a purely gynæcological record alone. Thus, for example, Dr. Urquhart furnishes me with a table of 271 female persons admitted to Murray House Asylum from 1888 to 1899 inclusive, who suffered from definite disorders of the sexual apparatus, and of this number he found that there were seventy-five in whom it might reasonably be said that an aberration of sexual function, or a lesion of a sexual organ, was correlated with the insanity. Here is the table :—

Disorder.	Heredity.	Recovered.	Unrecovered.	Died.	Total.
Amenorrhœa (20)	Insane	5	3	1	9
	Neurotic	1	2	...	3
	Denied	4	3	1	8
Menorrhagia (5)	Insane	1	1	...	2
	Neurotic	1	1	...	2
	Denied	...	...	1	1
Dysmenorrhagia (3)	Insane	...	1	...	1
	Denied	2	...	...	2
Irregular (1)	Alcoholic	...	1	...	1
Leucorrhœa (1)	Insane	...	1	...	1
Ulcerations (2)	,,	...	1	1	2
Prolapse and displacements (4)	,,	1	...	...	1*
	Alcoholic	...	...	1	1
	Denied	1	1	...	2
Fibroids (1)	Insane	...	...	1	1
Ovarian tumour (1)	,,	...	1	...	1
Climacteric (22)	,,	7	10	...	17
	Neurotic	2	1	...	3
	Denied	1	1	...	2
Puerperal (15)	Insane	1	1	...	2
	Neurotic	...	1	...	1
Puerperal	Alcoholic	...	1	...	1
	Denied	4	5	2	11
	Totals	31	36	8	75

[I have been favoured by Dr. Joseph Wiglesworth with an article of his that appeared as far back as January, 1885,† which I regret not having had before me at the time. In it he shows the condition of the uterus and its appendages in 109 insane individuals, as ascertained by

* Died of influenza—a very old woman on admission, with chronic bronchitis, asthma, and cardiac disease; otherwise I would have recommended operation; pessaries useless.

† "Uterine Disease and Insanity," *Journ. Ment. Science*, London, January, 1885.

examination after death. This is a most complete table, giving the age, social state, form of mental disorder and its duration, with the cause of death, and the condition of the uterus and the appendages as found at the autopsy. In a second table he shows the condition of the uterus and its appendages in sixty-five insane patients, as ascertained by examination during life. Out of the 109 autopsies, in 5·50 per cent. fibromata were found. In two of these they reached considerable size, and "there was evidence derived from the history of the patients, and the mental symptoms, that the tumours were important *contributory* factors in the production of the melancholia from which both patients suffered." Of the sixty-five cases examined during life, two had fibroid tumours of the uterus. In one, the correlation between the tumour and the sexual delusions from which the patient suffered was not established from the duration of the mental affection; in the other there were delusions as to torture inflicted by instruments introduced into her womb. "These delusions," Dr. Wiglesworth says, "existed for two or three years at least, and appear clearly to depend upon the growth of a fibroid tumour in the fundus of the uterus. Though the tumour is not at present producing any marked physical effects, it is legitimate to inquire whether operative interference might not be justified, in order to rid the patient of what seems to be such a source of misery to her." There can be now no doubt that hysterectomy would be justifiable in such a case.]

Turning now to some statistics of our American and Canadian colleagues, the greater attention bestowed by them on the correlation between insanity and disease of the sexual organs gives their conclusions a special interest. Hobbs (of the Eastern Michigan Asylum) says in a lecture he delivered at the close of 1899, that Manton was the first transatlantic authority who specially investigated this relationship, and operated upon insane women for such diseases; and the late Dr. Rohé, eight years since in the Maryland Hospital, influenced by the fact that of the first hundred women whom he examined, forty had lesions of the sexual organs, continued his investigations, arriving at the conclusion that "earlier operation in appropriate cases would very largely increase the proportion of recoveries." Dr. Hobbs, working on these lines in the London Asylum at Ontario, during five years had 800 insane women under observation, and of these 220 were examined by a gynæcologist. One hundred and eighty-eight, or 85 per cent., of those examined had distinct, and in many cases serious, lesions of the pelvic organs, there being 371 lesions in the 188 patients. It is interesting

to note the nature of these lesions—subinvolution or endometritis in 132, diseased or lacerated cervices in sixty-two, retroversion or prolapsus in sixty-six, myomata in sixteen, malignancy in two, disease of the adnexa in thirty-three, various lesions of the vagina in thirty-seven. Eighteen women suffered from dysmenorrhœa or menorrhagia. These of course were cases specially selected as likely sufferers from pelvic disease, and were about 25 per cent. of the entire patients in residence during the time in which these investigations were conducted. There were 311 operations performed on the 173 women, as follows:—A hundred and thirty-one curettings, fifty-three trachelorrhaphies, or amputations of the cervix, thirty-seven Alexander's operations, thirteen ventro-fixations, twenty-seven perineorrhaphies, twenty-two ovariotomies, fourteen abdominal and nine vaginal hysterectomies, three myomectomies, and two cœliotomies for tuberculous peritonitis. Without going into details, the summary of the results of operation in these cases is as follows:—Seventy-three, or 42 per cent., recovered mentally; forty-one, or 24 per cent., were improved mentally; in fifty-five, or 32 per cent., there was no change in the mental condition; and four, or 2 per cent., died. Dr. Hobbs appends some most striking instances of rapid recovery after the gynæcological operations. He is not oblivious to the obvious criticism on such statistics, that a certain proportion of these women would have recovered from the disordered mental state without any operation.

What he contends is that, taking eight years in the history of the asylum, the introduction of gynæcological surgery as an adjunct of treatment has improved the percentage of recoveries, from 33 per cent. to 51 per cent. on the admissions; and he compares the results following from cure of the affections of the sexual organs with recovery resulting from the surgical treatment of inguinal hernia by the Bassini method in twenty-three cases, as in the latter no improvement in the mental condition followed, though the subsequent nursing of the patient was the same in both instances. Another interesting point that Dr. Hobbs dwells on is a comparison of the relative importance of the various sexual

lesions in the production or maintenance of cerebral disturbance. Of the inflammatory utero-ovarian affections, in ninety-six cases treated the recovery was 50 per cent.; in forty-seven cases of utero-ovarian displacements corrected, there was 36 per cent. of recoveries; and in non-inflammatory utero-ovarian and vaginal lesions, there was 26 per cent. of recovery. In no instance did the administration of an anæsthetic in the 600 anæsthetisations make any difference in the mental state of a patient. They were neither better nor worse. Ernest Hall, in a paper published in the *Pacific Medical Journal* in April, 1900, gives a table of seventy-five cases of insanity in women, in whom in only four cases examination failed to detect some affection of the sexual organs. In twenty-one of the entire number there was a previous history of pelvic disease, and on examining the nature of the affection present in these seventy-one women, one is struck by the fact that only one instance of uterine myoma or other uterine tumour is recorded. By far the larger proportion suffered from lacerations of the perineum and cervix uteri, or displacements of the uterus, tumours, and chronic inflammatory conditions of the adnexa.*

Dr. Hall gives the results of operative treatment in thirty-eight cases of insanity. In some the operations were of a complex character—as, for example, removal of the appendages and ventro-fixation, amputation of the cervix, oöphorectomy, and ventro-fixation. The operations thus performed were —Curettage, nine; operations on the cervix, as amputation of the cervix and trachelorrhaphy, with perineorrhaphy, eleven; oöphorectomy and salpingo-oöphorectomy, twenty; resection of the ovaries, ten; salpingotomy, one; ventro-fixation, nine; supravaginal hysterectomy, one; vaginal hysterectomy, one; colpotomy, two; hæmorrhoids, one. Out of the seventy-five cases, only two had had a previous gynæcological examination. Of those operated upon, we can classify the results as follows:—Six complete recoveries, seven partial improvements, three temporary improvements, nine slight improvements, and five negative results. One case of acute

* See communication by the same author in the *Brit. Gyn. Jour.*, November, 1900: "The Gynæcological Treatment of the Insane."

mania died nine weeks after the operation, from meningitis ; one died nine days after operation, from meningeal congestion and septicæmia ; one died nineteen days after operation, from the bursting of a secondary abscess into the perineal cavity ; one died on the eighteenth day after operation, namely, a case of curettage, with suspension of the left ovary and ventro-fixation : there was no post-mortem.

In a table before me, compiled from a paper by Dr. Mary Dixon-Jones, salpingo-oöphorectomy or oöphorectomy was successfully performed on eighteen women for affections of the nervous system, with the result of a complete cure. Of these, twelve suffered from epilepsy, or hystero-epilepsy, four from insanity, two from osteomalacia. The histories and results of these cases were collated by the author from American and Continental literature.

George Engelmann has reported a case of immediate cure of insanity by replacement of a retroverted uterus, and another of melancholia in which there was a duplex retro-flected uterus, with endometritis of both uterine cavities. He exsected the vaginal septum, and applied the electro-cautery to the uterine cavity. In a third case of melancholia, the performance of Emmett's operation for lacerated perineum, with restoration of the uterus, complete cure was effected. The depressing mental effect of retroversion of the uterus, with the accompaniment of displacement of the ovaries, is hardly recognised as generally as it should be. Some years since, in conjunction with the late Dr. Hack Tuke, I saw a case of acute melancholia in a young girl in whom there had been for some time premonitory symptoms. Here, within a few weeks, the patient was well enough to return home after simple rectification of the displaced uterus.

The conclusions of Rohé, of the Maryland Hospital, as to the harmlessness of the vaginal examination of the insane, and the benefits accruing from surgical interference in cases in which there is disease of the sexual organs present, are too well known to demand recapitulation. He was one of the foremost and most staunch of advocates for examination of insane women and for surgical interference, special permission being given by the relatives of the patient, when disease is shown to be present.

Professor Lapthorne Smith, of the Samaritan Hospital for Women at Montreal, in writing to me on this subject, says that he has had "about twenty cases, in which the patients, who were suffering from mild forms of insanity before operation, were completely restored afterwards."

I have elsewhere quoted remarkable individual cases of cure of insanity by removal of the diseased genitalia. Perhaps one of the most striking is that recorded by Professor Japp Sinclair, in which abdominal hysterectomy completely cured a case of insanity, in which there was a bleeding myoma present. A year after leaving the Cheadle Royal Lunatic Asylum, "she was living at home, and able to take charge of her children and household just as well as before the symptoms first showed themselves." Other almost equally interesting cases are recorded by Christopher Martin and Halliday Croom.

The fact, as Dr. Rooke Ley writes, "that uterine displacements and tumours do undoubtedly cause and perpetuate mental disorders, and induce delusions referred to the neighbourhood of these organs, and that ovarian tumours act in a similar way," is not only acknowledged, but enforced, by British gynæcologists and psychologists generally, but experience of the results of operative interference in our large asylums appears to be limited, and undoubtedly, judging from the replies I have received from various psychological authorities, there is considerable scepticism as to the benefit to be derived from operative interference. There is, however, no bias or prejudice, but an open mind, in regard to the question. I speak from letters received from those who have had experience from the supervision of over twelve thousand beds in institutions for the insane, and in the discussion at Ipswich,* the President, Dr. Percy Smith, accepted my proposition as I have given it on this point.

With regard to the question, do gynæcological operations predispose to insanity, I have drawn on the experience of some of the greatest of living operators. The conclusion, almost universally expressed, is that stated almost in the same words by Professor Auguste Martin of Berlin, and Professor Schauta of Vienna. The view of the former I have already

* British Medical Association Annual Meeting, 1900.

given. Professor Schauta says: "I never saw, in a healthy woman, any disturbance of mind after an operation. . . . There is always" (in such a case) "some predisposition." "I have not," says Professor Hegar, in his reply to me, "observed any psychosis to an antecedent major operation on the female genitalia." "In over 4000 operations on women," says Professor Lapthorne Smith, "of which over 500 were abdominal sections, there was not a single case of insanity following the operation." Dr. Christian Simpson quotes Homans as having two cases in 1000 laparotomies, including several hundred ovariotomies and hysterectomies. Lawson Tait had no case of insanity in his practice up to 1890. Spencer Wells had but two cases arising out of ovariotomy, and Granville Bantock's experience coincided with that of Tait up to the same date. Savage collected records of four cases of insanity out of 483 cases of double salpingo-oöphorectomies, and Keith, in sixty-four hysterectomies, with removal of the ovaries, had six cases of insanity. These last statistics appear to show an unusually large proportion, but it has to be remembered that septic conditions exert a marked influence in the production of post-operative mental disturbance, and that those operations were performed at a time when the mortality was large from septicæmia, and septic complications even in those who recovered were not infrequent. Personally, I have never seen any injurious mental consequence follow a gynæcological operation in a healthy woman; and in the only two in whom symptoms of post-operative insanity appeared, one had previously been in an asylum, and the other, an official in a private one, had been a typical neurasthenic for some years.

With regard to the answers to the three questions I have advanced, the first is as to the indications for, and the circumstances under which, a gynæcological examination of an insane woman is expedient and justifiable. Dr. Robert Barnes advocated the elimination, by examination if necessary, of the presence of any sexual disorder in a woman before confining her to an asylum. That this is a rational conclusion, in view of our present knowledge, is, I think, clear. It does not necessarily involve an internal examination of the genitalia, for an inquiry into the past history of

the patient, together with the circumstances under which the first evidences of alienation appeared, will generally enable us to exclude the possibility of there being any interference with the discharge of the functions of her sexual organs. Such an inquiry will also assist us in arriving at the conclusion that symptoms of mental disturbance preceded any interferences of function, or *vice versâ*. Such a careful investigation giving us negative results, will influence us against the necessity for proceeding further. Also, obviously, in a fair proportion of cases there will be within our knowledge other causes predisposing to and producing the insanity. Take, for example, the frequently occurring one of heart disease as a physical, and disappointment in love affairs or mental worry as a psychical, cause. Or again, we may verify the habit of masturbation. Such careful inquiry will also elicit the proofs, both by symptoms and signs, of previous pelvic disease, whether in the uterus, adnexa, or external genitalia. Should this exist, we have a clear indication for the determination of the extent and nature of the disease, and its probable effect on the mental condition. The age of the patient, and her state, whether married or single, will influence us. The disorders of menstruation, so frequent during the years of adolescence, have commonly no local pathological explanation. We have, however, to remember that the causes of these are often congenital. A persistent dysmenorrhœa, menorrhagia, or metrorrhagia would certainly indicate the need for examination, as would a suspicion that the uterus was retroverted. Permanent non-appearance of the menses would arouse suspicion of atresia of either uterus or vagina, and the possibility of partial or complete absence of the genitalia has to be recollected. In married women there is not the same reluctance to examination, the causes of disorders of menstruation are more likely to be pathological, and consequently the indications for examination are generally more obvious. During middle life also we have all the parturient and puerperal sources of insanity requiring investigation. At the advent of and during the menopause, should any striking deviation from the natural course of cessation of menstruation precede or accompany the insanity,

an examination should be made, for the same reason that we advise it in ordinary cases, namely, to escape the error of overlooking any serious pathological condition of the adnexa and uterus. This being so in the case of the sane woman, it is even more so in the case of the insane, where we have the additional reason of the mental condition being attributable to any disease that may be present.

With regard to the second question of operative interference in cases of pathological changes in the genitalia of insane women, I think all the evidence before us, and which there is no reason to doubt the accuracy of, shows that such interference is called for—(*a*) When, on weighing the etiological factors in the causation of any particular case, they point to a causal relationship between the sexual disorder and the disturbance of mentalisation. (*b*) When observation of the patient shows that the pelvic disorder aggravates the insanity by intensifying delusions, directing the mind morbidly to the sexual organs, increasing the severity of periodical outbursts, or by the influence on the physical well-being preventing improvement of the mental state. It is for the psychologist to decide the most favourable time for operation, and the contra-indication that may be presented by the phase and type of the insanity.

Lastly, with regard to the third point raised, as to the occurrence of post-operative insanity after gynæcological operations, I have already answered this question. It certainly does not appear, from the published records of operations performed on the insane, that the symptoms have been thereby aggravated, save in very few instances, and in these the effect does not appear to have been permanent.

It is to be hoped, however, that by the collaboration of those psychologists in charge of our large public asylums and private institutions with experienced gynæcologists, aided by the intelligent assistance of those who have had the previous charge of the patients admitted into these institutions, more certain and reliable data will be arrived at, and thereby our treatment of the female insane will be less empirical and less hampered by bias and routine than it is at present. The desirability of the triple concert of the patient's physician

with the expert psychologist and gynæcologist, in order to arrive at more complete conclusions—clinical, physiological, and pathological—is insisted on in the letter I have already quoted, from so distinguished an authority as Professor Hegar, for, as he says, "with such a large supply of material as is found in our great insane asylums, valuable results might then confidently be looked for."

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* Papers marked with an asterisk are in Hack Tuke's "Dictionary of Psychological Medicine."

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CHAPTER VI

THE INDICATIONS FOR THE OPERATIONS OF HYSTERECTOMY AND MYO-HYSTERECTOMY IN MYOMA

A BRIEF survey of the present attitude of gynæcological surgeons with regard to the operations of myo-hysterectomy (supravaginal) and hysterectomy, appeared to me to be a not unprofitable ending to these contributions. I refer more particularly to the indications and justification for operation on a myomatous tumour by either of the procedures I have mentioned. I used the term myoma throughout, though of necessity it refers to both fibroma and fibro-myoma. By hysterectomy I refer to the step of complete removal of the uterus with or without the adnexa of one or both sides, whether by the abdominal or vaginal route, or what is known as the combined method. By myo-hysterectomy we understand the incomplete removal of the uterus, inasmuch as more or less of the cervix uteri is left, and the operation is completed without opening the vagina, and hence termed the supravaginal method. I should at some future period desire to make a few remarks on the indications which influence us in the selection of these respective modes of operation, as also some observations on the ligature as the ideal method of hæmostasis to be adopted in hysterectomy. The time has arrived when we may hope for something like settled conclusions as to the indications for, and the best method of, operating, as well as the most perfect technique. Hitherto it has been almost unavoidable that valuable time should be wasted in discussing these, so involved have been many of the points at issue, and so

natural the tendency to rehearse matters of elementary detail. To borrow an expression from the political world, there has been a good deal of indulgence in the somewhat unproductive occupation which we understand as "a ploughing of the sands." So wide is the field, and so great the temptation to discursive debate, which the evolution of the operation of hysterectomy offers, that it necessarily encourages a somewhat quasi-pertinent yet futile meandering, with the result that there is but little solid advance made as the result of the expenditure of so much elocutionary effort.

In gynæcological discussions it is no uncommon occurrence to find a number of speakers successively debating questions which have but little bearing on each other. One deals with the justification for operation; another with the comparison of some abandoned and obsolete method with a practice equally out of date; a third enters into a tedious defence of some trifling differences in technique, to which he attaches an extraordinary and exaggerated importance—all these matters being not infrequently confused by the intermingling of vague pathological generalisations and clinical illustrations which may have but a remote bearing on the subject, and certainly do not tend to elucidate it. Here, then, in the first instance, we may inquire how far we can satisfactorily formulate definite rules of practice for our guidance in advising removal of the uterus for a myomatous tumour or tumours, by either of the methods I have mentioned. The propriety of the operation of hysterectomy has to be determined under so many diverse conditions and circumstances, that our resolve to operate or not must depend upon the special features of the individual case in which a decision has to be arrived at. We have to decide what are the immediate dangers attendant upon the tumour in question, whether it be of such a nature as to afford room for alternative treatment, more particularly whether the operative procedures of ligature of the uterine arteries, salpingo-oöphorectomy, or myomectomy, are indicated. We must fairly judge how far the character, position, and attachments of the growth or growths influence the risk, raising it above that which is accepted as a fair average following from the operation in cases which are not

of a very exceptional nature. In doing so, we have to apportion as nearly as we can the internal and inherent dangers which are incidental to the tumour itself in its pathological features, as well as its surrounding complications, those present at the time, or likely to follow its further growth and development. Here the first difficulty meets us. Myomatous tumours are most variable in the mode, direction, and rapidity of their growth. In their mode, inasmuch as they may grow to a certain size and then either involute, atrophy, or generally shrink; or, having attained a given size, growth is quiescent for an indefinite time, when again the tumour puts on a phase of activity, and rapidly increases. In their direction, as nothing is more common than to find a tumour on a first examination occupying a defined position and relation to the uterus before it has emerged from the pelvis, and later on becoming irregular and assuming a lateral one; or the mass projects backwards, obliterating the pouch of Douglas, and compressing the rectum; or it grows anteriorly, displacing upwards the bladder and ureters, or develops downwards, and approaches the vaginal outlet.

But in nothing does the development of a myoma vary more than in its rapidity of growth, and this is a matter of such common experience that it is unnecessary to dwell upon the fact. It seriously influences our prognosis, however, inasmuch as the tumour which may be borne with comparative comfort to-day may in a year's time, or even less, involve the bowel, causing obstruction; the bladder, resulting in incontinence; the kidney, by ureteral pressure; or affect locomotion, by pressure on the sciatic nerve. Myomata vary in consistence, as some are comparatively soft and compressible, others dense, and of stony hardness, depending much on the relative proportion of myomatous or fibromatous structure present.

If we consider the degenerative changes possible in a myoma, we must at once concede that, while a number of most reliable authorities, as Virchow, Schröder, A. Martin, Doran, and Howard Kelly, amongst many others, have established the fact that secondary sarcoma does occur, the probability of such a change taking place is small, and, in ordinary cases, other complications being absent, such

PLATE XI.

Myoma complicated with carcinoma. (Author.)
(Case reported in "Diseases of Women," 8th Edition.)
[*To face p.* 107.

probability should have but a slight influence on our decision in the question of operation. Also it is true that, while primary sarcoma of the mucosa or parenchyma may occur coincidently with, or following upon, myomatous growths elsewhere in the uterus, such a complication is rare, and its occurrence there would be attended by characteristic symptoms, quite sufficient in themselves to arouse our suspicion. The same may be said of carcinoma, which is still more rare as a complication than sarcoma.* A typical example of such a carcinomatous complication I have myself published.† The fibro-myoma was the size of a fœtal skull at term. It was removed from a spinster æt. 58, by vaginal hysterectomy. The specimen (Plate XI.) consisted of three portions; the largest was an oval intramural fibroid, 5 ins. in its chief diameter, projecting from the back of the uterus near the fundus. The lower segment of the uterus was invaded by a soft white growth, a columnar-celled carcinoma, with solid branching columns of epithelium. Below this was a small fibroid distinct from the carcinomatous portion, and not infiltrated by it. The third part consisted of the cervix uteri, and adjacent portions of the vagina. The os uteri, the internal surface of the cervix uteri, as far as the internal os, were normal, though there was much inflammatory infiltration between the bundles of muscle fibres.‡

The patient made a good recovery from the operation, survived twelve months, and died, as I learned, from some acute attack of bowel obstruction, doubtless of a malignant nature. But there are other integral changes which happen in myomata, and which are not so infrequent that we can exclude them from serious consideration. These are mucoid, colloid, calcareous, and suppurative. Associated with these are those necrobiotic processes resulting in sphacelus, the accumulation of gangrenous *débris*, and the formation of a central cavity in the tumour.

* It is questionable if degeneration into carcinoma has been ever established.

† *Brit. Gynæc. Journ.*, London, 1897, vol. xiii. No. 51.

‡ I have just seen a patient, æt. 64, in whom there was a fairly large myoma with a carcinomatous cervix (proved by the microscope), the carcinoma evidently of recent occurrence. The carcinoma invaded the entire cervix, and extended into the cavity of the body.

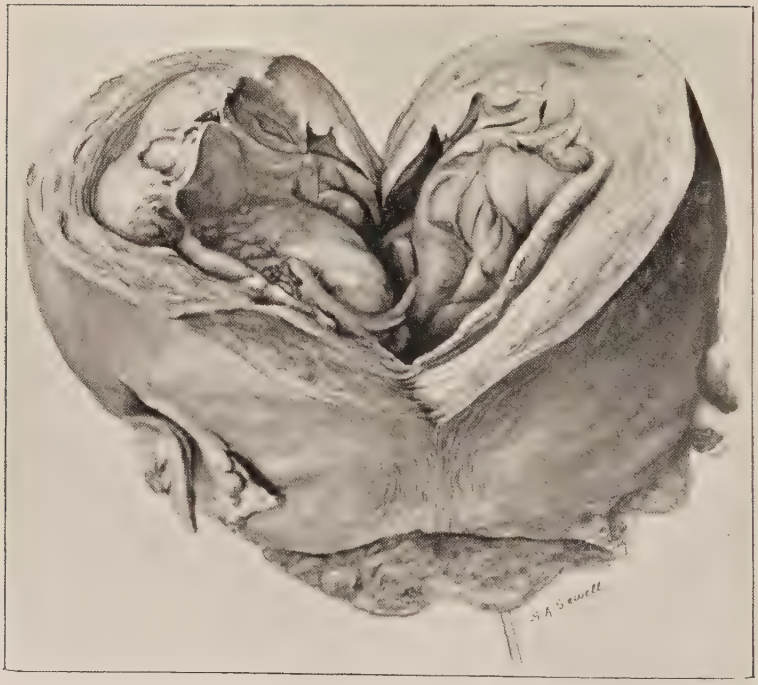
Recently I saw, in consultation, a patient dying from septicæmia, in whom there was a very large myoma. For some time there had been disintegration and slough with a profuse discharge, which had assumed the septic character. This change had followed upon previous exhaustive hæmorrhages, expectant and palliative treatment having in this case been carried to a point when interference was impossible.

An instance of necrobiotic change with calcareous degeneration and mucoid accumulation, I have already referred to (see Plate VIII.). In this case an eminent gynæcologist declared and wrote that operation was not a "matter of necessity," from the fact that the general health was not much impaired, and that the tumour was not giving rise to any serious local distress. At the same time, he concurred in my opinion that operation was justifiable. The issue proved that the operation *was* essentially one of "necessity," and that eventually non-interference would have resulted in the death of the patient.

Cystic degeneration is perhaps the most frequent form of degenerative change that we meet with in myoma, and the extent to which liquefaction of the myxomatous masses occurs is not infrequently very great. We have then, instead of numerous cystic cavities, one huge one, as in a case brought before the British Gynæcological Society by Mr. Skene Keith. The tumour weighed 36 lbs., and was taken from a single woman æt. 60. Mr. Keith had seen her ten years previously, The tumour was then small, and it was decided not to interfere. With the cessation of menstruation, the tumour decreased in size, and then remained stationary until eighteen months before the operation, when it began to increase rapidly, until it attained to the size mentioned. There was no microscopical examination in this case, but, when the tumour was cut into, it consisted almost entirely of one enormous cystic cavity full of broken-down *débris* in mucoid fluid.

Another such case was reported by Dr. Worrall of the Sydney Hospital, in which the cystic myoma weighed 38 lbs. The patient from whom it was removed was æt. 42, and the cavity contained some 2 gals. of dark brown fluid, in which

PLATE XII.



Cysto-sarcoma of the uterus, with associated necrobiotic and mucoid degeneration surrounded by the muscular structure of the uterus. (Mr. Jessett's Case.)

[*To face p.* 109.

floated great ropes of disintegrating fibro-muscular tissue. In this instance the tumour appeared to have been growing for nine years, but the great increase in size had occurred within the last eighteen months. Harrison Cripps, out of eighty cases of myoma, found cystic degeneration in six.

In a table of thirty-eight cases of hysterectomy, performed by Charles Noble, examination of the tumour disclosed degenerations, cystic, sarcomatous, or calcareous, in nine; necrosis, in two—all of which must have ended fatally; and of the remainder the disease in the adnexa was of such a nature as would have proved fatal in at least eleven cases. Out of seventeen fibroid tumours removed by him per vaginam, five were necrotic, making thus a total of seven cases of necrosis out of fifty-five operative cases; and he calculated that a study of his cases of hysterectomy indicated that from 30 to 38 per cent. of the women would have died as the result of their disease, without operation.*

The difficulty of accurate diagnosis in the case of fibro-cystic tumours of the uterus is well exemplified in the case of a tumour recently exhibited by Mr. Jessett at the British Gynæcological Society. The tumour was shown as a fibro-cystic tumour of the uterus; the cyst, containing a large quantity of fluid blood, removed by cœliotomy. From a somewhat insufficient pathological report, a doubt was expressed as to the cyst being a secondary sarcomatous growth. The patient from whom it was removed was æt. 44, married, a nullipara. Too short a time has elapsed since the date of operation to speak of any permanent result. So far she is in her usual health. Mr. Jessett was uncertain as to the nature of the cyst, whether it was a necrobiotic myoma of a cystic nature with extravasation of blood into the cyst, or a myoma undergoing sarcomatous degeneration with associated softening and effusion of blood. The following report of the specimen, which has since been furnished by Mr. Targett, settles the question. The tumour is figured in Plate XII. "This specimen consists of a uterus removed by operation. It is enlarged to the size of a five months' gestation by a cystic tumour embedded in the anterior and

* See Appendix.

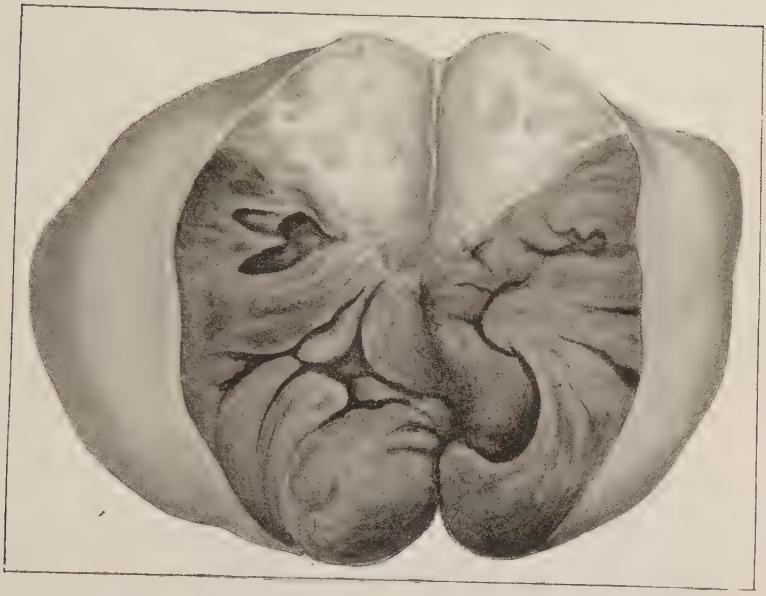
left lateral walls of the uterus, and the elongated uterine cavity is therefore placed behind and to the right of the main tumour. A sagittal section of the tumour reveals an irregular space with a smooth uneven surface, and a thick wall composed of a yellowish white growth. This space is bounded in all directions by the muscular tissue of the uterus. On section, the growth has a fibrous appearance, mottled with orange and brown areas from old hæmorrhages. Histologically it is a sarcoma composed of spindle-shaped elements, arranged in interlacing bundles, and the cavitation is due to mucoid degeneration and necrosis. From the character of the growth I should conclude that it was primary in the uterus."

Kelly and others describe a telangiectatic myoma, in which there were large venous sinuses leading from it, and enormous venous tracts within. Such a myoma may, if caught with a vulsellum or the *griffe*, give rise to most troublesome hæmorrhage in its delivery. A tumour of this kind was exhibited by Dr. Purefoy of Dublin at the Gynæcological Society (Plate XII*a*). Of this I have had myself an unpleasant illustration some time since, when, in using the *griffe* of Doyen to elevate a large myoma, the bleeding from the laceration of the soft venous canals was most alarming and difficult to stop, necessitating rapid hæmostasis of the broad ligaments at both sides before it was controlled. The possibility of such an accident is avoided by the use of Doyen's hélicoide, really only a modification of Tait's corkscrew. Kelly, in common with other observers, has described benign adeno-myomata, and Theodore Landau also the same compound form of degeneration.

It would not, I think, be any exaggeration to estimate the proportion of myomata complicated by one or more of these degenerations and changes at from 15 to 20 per cent.

There is also to be considered as a most important factor, apart from any other in the question of prognosis, the presence of associated disease in the adnexa. Such complications include not merely inflammatory degenerative conditions, suppurative, cystic, or other, but also solid tumours of the ovary ; and when the latter are present, even though the myoma itself may be of comparatively small size, symptoms due to pressure

PLATE XII*a*.



TELANGIECTATIC MYOMA (DR. PUREFOY'S CASE).

Patient, aged 52, unmarried; had severe attack of peritonitis, lasting 6 weeks; large abdominal tumour discovered while under treatment; was operated upon at the Rotunda Hospital. There were numerous omental adhesions, the separation of which caused much hæmorrhage. The abdominal wall was firmly incorporated with the anterior surface of a large fibroid, connected with the left cornu of the uterus by a small pedicle.

On section, the substance of the tumour, except a small portion near the pedicle, was found to be of a dark red colour, and was hollowed out into large cavities freely communicating and containing unaltered blood in large quantities. Dr. Earle reported as follows on the microscopical appearances:—"The tissues of the tumour, though so unusual in colour, did not show degenerative changes, but stained in the usual way, and the numerous cavities having a very smooth lining membrane appeared to be dilated blood vessels." This condition in a myoma is of great rarity, and very few instances of it have as yet been reported in this country.

[*To face p.* 110.

FIG. 1.—Adeno-fibroma of the left ovary complicating a large myoma of the uterus, causing obscure hip-joint symptoms and lameness by pressure. (Author.)

("Diseases of Women," 8th Edition.)

FIG. 2.—Microscopical section of same.

[*To face p.* 110.

may force early interference. This case, which I have already recorded, is one in point :—

The patient was sent for examination in consequence of an obscure affection of the left hip-joint. There had been constant pain and swelling of the left thigh, with difficulty in walking. The catamenia had been regular. There was no hæmorrhage. I discovered a large fibro-myoma, and determined that her symptoms were due to pressure from the tumour ; intraperitoneal hysterectomy was performed on February 2, 1897.

The multiple fibromatous ovarian mass was then discovered on the left side. It was larger than an orange, and was jammed downwards and to the left side. The patient made a perfect recovery. The microscopical report of the Committee of the Obstetrical Society was as follows :—The tumour (part involved in the growth) consists chiefly of well-developed fibrous tissue, arranged in intersecting bundles ; sections taken from different parts show, in addition, numerous widely distributed well-defined spaces fitted with epithelial cells. These spaces are irregularly oval or elongated, occasionally branching, and there is no lumen. There is no sign of invasion of the surrounding fibrous tissue by the epithelial cells, and no small-celled infiltration. The stroma surrounding some of the spaces is dense and hyaline in appearance. The decision arrived at was, that the tumour was not malignant, and that in the arrangement of the epithelium it most nearly resembled that met with in some forms of adeno-fibroma of the breast (Plate XIII. Figs. 1 and 2).

A most interesting case of adenomatous degeneration has been recorded by Theodore Landau, the particulars of which are worth reproducing here. The patient, married, æt. 38, was operated upon in December, 1897. She suffered from profuse metrorrhagia and attacks of dyspnœa, and was a tall, strongly built woman, with fair development of fat. There was a systolic cardiac murmur. The tumour, which presented areas of unequal hardness, reached from the pelvis, which it filled, to the epigastrium. The diagnosis was a uterine myoma with left adnexal tumour. The following is Professor Landau's description of the tumour and adnexa * :—

* Landau, "Anat. u. klin. Beitr. z. Lehrevondenmyomen am weiblichen sexual-apparat," Berlin, 1899.

"The uterus, weighing over 2 kilos, is uniformly enlarged; it is seen divided by a sagittal section. The left appendages, now empty, consisted of a retort-shaped tubo-ovarian cyst, filled with blood, partly coagulated, partly fluid. The tube was convoluted, and was in parts as thick as the thumb, and measured 10 cms. (4 ins.); the rounded cystic ovarian portion was 13 cms. in diameter. On the inner surface one found here and there papillary excrescences the size of a cherry, and of the shape of pointed condylomata. On the right side is a hæmatosalpinx, now empty, which was the size of a hen's egg, and was 14 cms. long; the ovary is greatly enlarged, with several transparent cyst follicles. On both appendages are numerous remains of old adhesions.

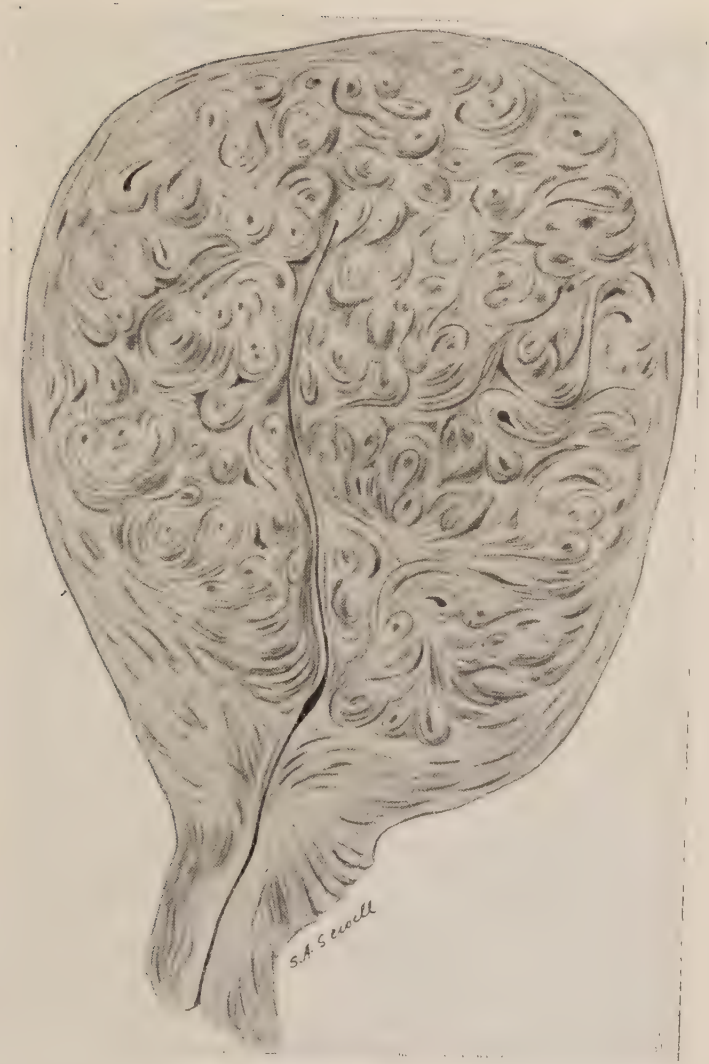
"The uterus is 19 cms. long, whereof the cervix is 4 cms.; the cavity is represented by a gaping slit. The uterus has grown in two distinct layers—an inner kernel zone, which attains a maximum thickness of 7 cms. anteriorly and 4·5 cms. posteriorly, and a shell of an average thickness of 1 cm., becoming a little thicker near the internal os. The latter consists of concentrically lamellated myometrium; the greater portion of the kernel mass consists of a coarse reticulated trellis-work of relatively broad muscular bundles, which is thrown into relief by the sinking in of the connective tissue lying in the meshes. The bundles are disposed for the most part in the circles or crescents around the tissues in the meshes. The latter appears darker and more spongy, and shows either notched and pit-like depressions, from a pin-point to a pin-head in size, or else circular or more irregular cysts, and elongated spaces up to the size of a pea, and all lined with a smooth inner wall like mucous membrane, and occasionally containing reddish brown fluid masses. Even to the naked eye it is evident that the tissue in the meshes is directly continuous with the mucosa of the cavity of the body of the uterus, and represents an extension of the same into the uterine parenchyma, for the elongated and cyst-like spaces open free into this cavity. In corresponding fashion there is microscopically no difference between the corporeal mucosa and the interfascicular tissue of the central mass. In the spread-out covering of the central tumour mass, which invests the whole cavity like a tube or mantle, can be readily recognised the myometrium. This has become reduced to the slender shell above described; and it is easy to trace how, out of its parallel concentric lamellæ, crescentic muscular bands have spread out in all directions, and extended in tortuous fashion into the muscular framework of the core of the tumour (Plate XIV.).

"The patient was discharged cured in a month."

With regard to the size of the tumour the effect that this *alone* has on our decision will vary much according to its method of growth, its position, and also its effect on the temperament of the patient.

I know of several patients with large tumours, who are enjoying life, and prefer to submit to the inconvenience and slight invalidism they cause rather than undergo operation,

PLATE XIV.



Adenoma of the uterus diagnosed as myoma. (Leopold Landau.)

[*To face p.* 112.

and certainly no one should urge them to this under the circumstances. One lady who for years was under the care of the late Matthews Duncan, and went by his advice annually to Woodhall Spa, has a huge fibroid, fully equal to the size of the uterus at full term, and yet travels about, manages a private estate, and is otherwise in excellent health. I see her periodically, and she would be fully prepared to be operated upon did any fresh indication arise. Hæmorrhage has long since ceased, but the tumour has not shrunk. A growth infinitely smaller might, in consequence of hæmorrhage, the results of pressure, and its effects generally, both physical and mental, imperatively demand removal.

A patient, æt. 47, whom I saw in March, 1900, was suffering considerable distress from a myomatous tumour, which partially filled the pelvic basin and encroached on the rectum. It was still to an extent movable, but caused considerable distress, with occasional attacks of severe pain and obstruction in the rectum. It passed but a short distance above the pelvic brim. The history of its growth did not extend beyond a year. There had been an attack of peritonitis. There had been no menstruation from the time she first complained. From the rapidity with which it had apparently grown, her difficulty in walking, the constancy of the pain, and the effects produced on the general health, I advised hysterectomy. The patient, however, was averse to this, and as another gynæcologist considered that an expectant plan might be pursued, nothing was done. I again saw the case in 1900. The tumour has grown laterally and downwards. She had had two or three attacks of pelvic peritonitis, there had been on a few occasions most serious obstruction of the bowel, the general health had deteriorated considerably, and she was unable to walk. Needless to say, the growth, involving as it did the broad ligament at either side, and fixed in the pelvis with adhesions, would now be much more difficult and proportionately dangerous to remove. Still, I learned that she had been advised "to wait a little longer." A few months later I heard casually of the patient's death, and that the autopsy had revealed malignant degeneration in the tumour.

Medium-sized and even small tumours, from their position and nature, may have to be removed on account of their encroachment on the bladder and the consequences of pressure, as in a case I have recently operated upon, in which the bladder was adherent for a considerable distance to the face of the tumour. Extremists may say "that all fibroid tumours, large or small, should be removed, as they are always a source of danger and of dangerous possibilities." * But an axiom so comprehensive few gynæcologists will agree with, even though the enunciator of it be a woman, who quotes in support of her statement the fact that Thomas Keith performed hysterectomy for a uterine fibroid that weighed 1 lb., and that A. Martin operated for a tumour the size of an apple. It is well known how conservative in regard to interference was that most distinguished of Scottish gynæcologists, Thomas Keith, in his later writings with regard to hysterectomy, but the mortality then was, as has been well said, nothing short of "fearful."

So far I have touched on the biological, morphological, and histological grounds connected with the tumour itself, and its immediate surroundings, which may impel us to perform hysterectomy. I will now refer to the associated clinical complications, whether present at the time or likely to follow its further growth and development, that must influence us. And first, there is the occurrence of hæmorrhage with attendant anæmia. This may demand hysterectomy when no other symptoms are present.

No longer can we regard hæmorrhage as the one great indication for interference with a myomatous tumour. In a large proportion of cases the bleeding is slight or entirely absent. It is approximately true to say that not in half the cases of myoma is the bleeding so severe as to be in itself the source of danger to the woman. Her discomforts and dangers arise from other consequences of its presence. Still, there is a large proportion in which the loss of blood with its associated defective general metabolism, its effects especially on the heart as well as the other viscera, and the profound anæmia which results, must sooner or later destroy life. It is true

* Mary Dixon-Jones, *Brit. Gynæc. Journ.*, London, February, 1898.

that salpingo-oöphorectomy and ligature of the uterine arteries, and, in some of the milder cases, curettage, with the application of chromic acid, may arrest the bleeding, cause shrinkage of the tumour, or so palliate the symptoms as to obviate the necessity for hysterectomy. Obviously, however, such desirable effects are dependent upon the nature and size of the tumour, and the alternatives frequently fail in their object, while the tumour and its other ill consequences are left, and the patient is subject to a second operation, with the more or less depressing anticipations generally present when failure follows an operative effort to relieve.

If we remember the frequent presence of cardiac rhythmic disturbance, hypertrophy, and in some cases valvular degeneration, together with the ever-present mental effect on the woman which the tumour causes, particularly if such conditions be accentuated by a general anæmic state, it is a matter for astonishment rather than otherwise that mental affections are not more commonly present in this disease than they are. As I have already shown, out of 220 insane women who were examined gynæcologically by Rohé, 188 had lesions of the pelvic organs, and of these latter sixteen suffered from myomata.*

In his strong protest, in which he says that "he feels it his duty to utter an urgent warning against accepting the simple fact of the presence of the tumour as a sufficient indication for operation," Howard Kelly acknowledges that he has operated two or three times solely on account of the distressed mental condition of the patient, induced by the knowledge that there was a tumour which she could feel in the abdomen. Until the operation was done, it was impossible to allay her fears or to persuade her to think of anything else but the tumour, and no reasoning had any effect. This is not an exceptional experience. A few years since I saw a patient with a large bleeding myoma, in whom the constant apprehension with regard to her condition had induced dementia, which assumed occasional maniacal phases. I advised operation, but not long afterwards a subcutaneous injection of hyoscyamin appeared to have resolved the difficulty, for she died within a short time after its administration.

* See Chapter V.

Various degrees of peritonitis, both local and general, are not uncommon. This is only to be expected from sudden stretching, subacute attacks of inflammation in the capsule of the tumour itself, rotations and subsequent torsion, associated adnexal disease, or secondary degenerations in the myoma. The occurrence of acute attacks of interstitial inflammation occurring in the substance of the tumour is not to be overlooked, as the result either of an injury, exposure to cold, or the occupation of the patient. Ménière drew attention to these attacks under the name of fibromitis. Temporary enlargement of the tumour, often considerable, follows, and may be attended by pelvic peritonitis, and extend even to suppuration. In a case of this nature that came under my observation, the tumour increased in size within a week by nearly one-third. There was hyperpyrexia with considerable abdominal tenderness, and the general symptoms of peritonitis. With treatment these subsided, and the tumour gradually decreased, but not to its former dimensions. Such attacks of peritonitis are frequently attended by another complication of myoma, the occurrence of ascites. This is more common where we have cystic or other degenerative changes, in which there may be transudation of irritating fluids or infective germs into the peritoneal cavity from the tumour, but appears to occur independently of any cause save the presence of the latter.

The myoma that complicates pregnancy calls for a distinct consideration from the point of view of operation. Kelly admirably differentiates the cases which may demand operation, and lays down the rule that we should "always remember that two lives are involved, and if possible save both, rejecting all radical measures unless the symptoms are urgent. Mere prophylaxis—that is to say, operating when there are no urgent symptoms on account of dangers which may arise—has no field here." Small and medium-sized fundal fibroids, intra-ligamentary and subperitoneal cervical fibroids, not large enough or so placed as to cause dystocia or prevent labour, and pediculated fibroid tumours which can be pushed up into the abdomen, do not justify interference during pregnancy, while interstitial tumours should

not be touched save as a *dernier ressort*, as abortion almost necessarily follows their removal. Extreme pain or rapid growth may compel interference, while a pediculated fibroid projecting into the vagina may be safely removed. In short, when a tumour is so situated that its removal offers the best chance of saving mother and child, while non-interference endangers the lives of both, operation should be attempted. Otherwise, we must wait for labour and perform Cæsarean section, followed by hysterectomy. The need for this latter step will depend, Kelly points out, upon the nature of the tumour or tumours, whether these may not be subsequently removed by myomectomy without ablation of the uterus.*

Perhaps not the least serious of the complications which have to be considered, in connection with the growth and the age of a myoma, are the adhesions, pelvic and extra-pelvic, which are liable to be formed between the tumour and the omentum, the intestine, the bladder, and the rectum. For not only have we to remember the direct effects of such adhesions on the viscera which are involved, but also the increase of the difficulties which have to be overcome at the time of operation, and the necessary prolongation of this in the management of the adhesions, or the complications and accidents they cause at the time, through the implication of the bowel, bladder, and ureters entailed by their separation, not to speak of hæmorrhage. Such occurrences as inversion of the uterus, and actual rotation of the tumour, are not to be forgotten, though they are very rare.

That the proportion of cases in which inflammatory, suppurative, cystic, and various degenerative changes, as well as neoplasms of either the ovaries or Fallopian tubes, or both, complicate myomatous tumours of the uterus, is considerable, cannot be gainsaid, and these may of themselves demand interference, independently of any question of expediency with regard to removal of the uterus. It may be a matter for discussion when salpingo-oöphorectomy alone, without interference with the uterus, or combined with either supravaginal hysterectomy or hysterectomy, should be

* See Appendix.

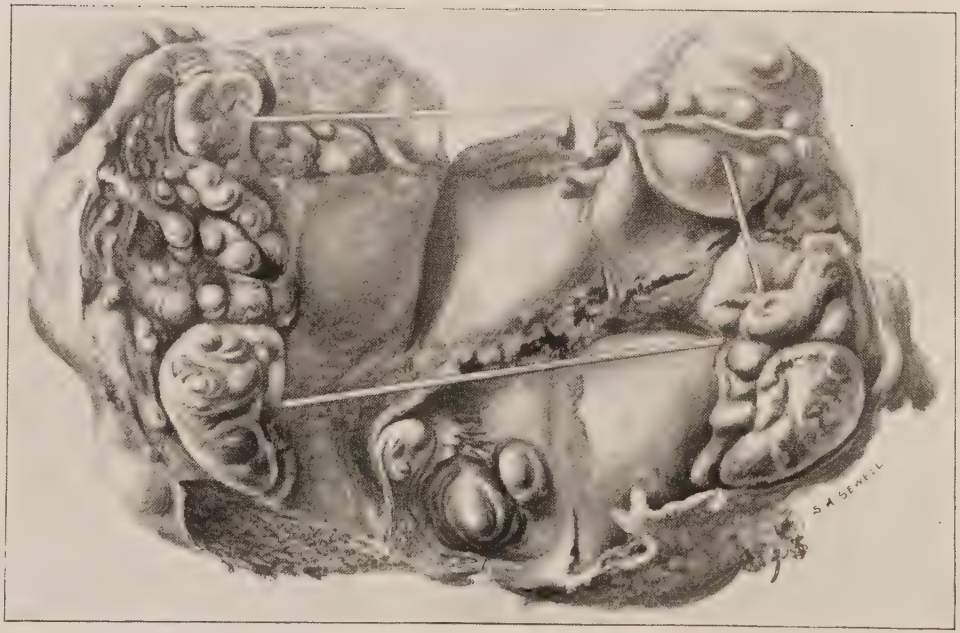
performed. If both adnexa be diseased to such an extent as to necessitate their removal, then it will be a question as between the supravaginal operation or that of pan-hysterectomy. Should those of only one side be so involved, and myomectomy can be performed, then there would be no justification for removal of the uterus.

An interesting case bearing on this question came under my observation a few years since. A lady, æt. 42, who had been seen by many gynæcologists, had suffered for some years from severe menorrhagia and metrorrhagia with associated anæmia and consequent cardiac distress. She had had a few attacks of severe pelvic peritonitis, and there was more or less constant pain in the region of the ovaries. On examination, these latter were found enlarged and adherent. The uterus was about the size of the closed fist, and with a fibroid projection in the anterior wall. This explained the bladder irritation from which she suffered. I advised in this case salpingo-oöphorectomy, and this was agreed upon. I should have done a supravaginal operation at the time, only that I had not raised the question of hysterectomy. The operation proved to be both difficult and tedious, from the mass of adhesions in which the adnexa at both sides were embedded. On bringing the uterus forwards, the fundus was found to be studded all over with fibromatous projections, giving it a nodulated appearance, the principal nucleus being in the anterior wall. The following is a report of the condition of the adnexa furnished by Mr. Targett. The operation was performed in 1896. Since then the patient has recovered good health, and there have been no pelvic symptoms whatever, and when I last examined the uterus it was considerably reduced in size.

"Both appendages show old inflammatory changes in connection with the tubes and broad ligaments. *The right tube* is closed at its ostium, the ampulla considerably dilated, and the uterine end appears thickened. There are many adhesions binding it to the ovary. The right ovary is small, shrunken, corrugated on the surface, but free of adhesions except towards the mesosalpinx. On section, there are a few cysts and one large corpus luteum. *Left side.*—The mischief here is rather more extensive, in consequence of more adhesions between the tube and ovary. The tube also is more dilated, and its ostium blocked. The wall of the tube is not thickened as in pyosalpinx. The left ovary is flattened out and firmly adherent to the tube and mesosalpinx."

There is now no doubt in the minds of gynæcologists that far too great importance was formerly attached to the results of the menopause on a myoma. The experience of Noble is in accord with that of most of his contemporaries—that there is no security that after the menopause a myoma will cease to grow and give trouble, or escape suppurative

PLATE XV.



Multiple Myoma removed from patient suffering from profound anæmia caused by hæmorrhage during the climacteric abdominal hysterectomy.

[*To face p.* 119.

and necrobiotic degeneration; while, on the other hand, the delay encouraged by the prospect of relief or cure when the change of life takes place involves considerable risk, not only from the local changes that are apt to occur in connection with the tumour itself, but also from the deterioration in the patient's health generally during the uncertain period through which she is encouraged to pass without relief, and which may, in some women, extend to the age of 55.

"The climacteric years," says Ludwig Kleinwachter, in writing on the biology of fibroma of the uterus, "have not nearly so great an influence on the shrinking of fibro-myomata as has hitherto been supposed. Very often the tumours grow in spite of the menopause, and even more rapidly than before. It almost seems as though during this time the greatest danger of malignant degeneration of these tumours is to be feared." *

LARGE BLEEDING MULTIPLE MYOMA—HYSTERECTOMY AT THE MENOPAUSE.

The patient, aged 54, multipara, youngest child 24, suffered for a considerable time from excessive menorrhagia, and of late from severe metrorrhagia. She consulted me early in January. Being averse to examination, she had had no advice for the tumour, though it had been accidentally discovered when much smaller, by a physician, six years previously. When I saw her her appearance was blanched and her face puffy. There was a hæmic murmur, and her general condition as unpromising as could be conceived for operation. Her urine was normal. There was little disturbance of either bladder or bowel. I put her through a course of feeding, with rest, during which time I observed a catamenial period, which lasted a week. The hæmorrhage was again most profuse and alarming. I operated by supravaginal hysterectomy on February 25, and the tumour, weighing nearly seven pounds, was removed. The operation was complicated by the opening of a large venous sinus in the broad ligament, which communicated with a distended venous sac on the surface of the tumour. This, however, was controlled by digital pressure and clamp. The course of convalescence was uninterrupted. Before operation the patient was completely blanched by the previous hæmorrhages. It is noteworthy that the tumour developed and grew during the menopause. (Plate XV.)

The practical experience derived from the clinical observation of the course of uterine tumours at this time verifies

* *Ztschr. f. Geburtsh. ü. Gynäk.*, Stuttgart, trans., *Brit. Gynæc. Journ.*, London, August, 1895.

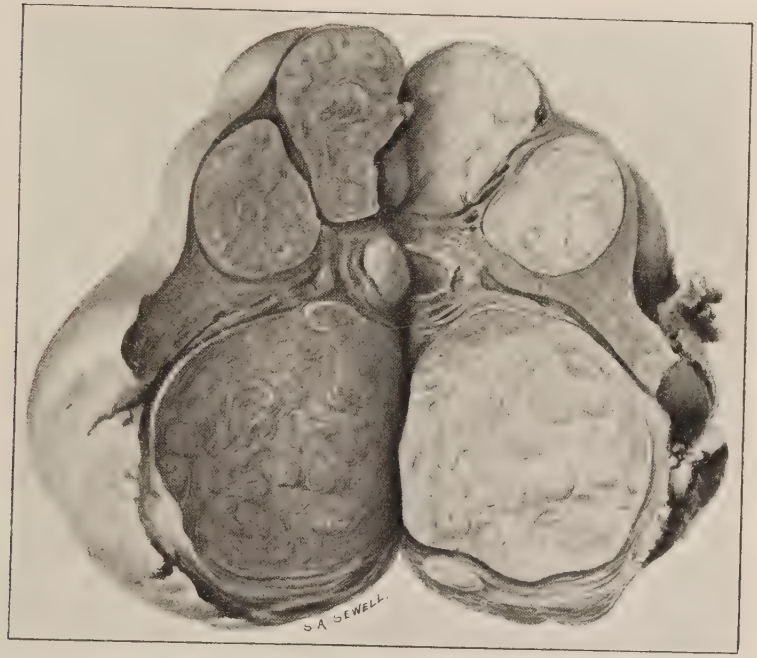
these conclusions, and forces us to assume quite a different attitude in regard to their removal, and to doubt if, instead of being more hopeful and expectant, we ought not to more reluctantly assume the responsibility of inaction and the holding out of delusive hopes.

As regards the woman's desire for operation, the ethical question as to how far she may be entitled to insist upon operative relief, knowing fully the risks entailed in her particular case by interference, must be a matter of opinion, connected with her exercise of free will in the matter, and the determination of the surgeon to comply with her request. The social position she occupies will doubtless largely influence her decision.

The lesson drawn from the case of a woman who determines to bear with her tumour, and put up with the necessary discomfort, or endure chronic invalidism, has no bearing on that of a woman who has domestic or other duties to perform in order to support herself or family, and has to earn her living. If the woman be a free agent, as she should be, it is our duty to assist her to arrive at a conclusion based upon an intelligent and fairly accurate view of the reasons for and against interference, placing before her the dangers of expectancy as compared with those of whatever operation we advise, leaning rather to an exaggeration than an underrating of the latter. This of course refers only to cases in which necessity and urgency do not call for the unqualified advice of immediate operation. Should we counsel postponement, at least in a large number of cases the woman should clearly understand that she undertakes the responsibility for the increased dangers and possible complications resulting from procrastination. Only a comparative few of those who do not suffer from serious complications of the tumour can be said not to be more or less invalids, and we must recollect this when advising in the case of one whose means are not such as to afford her opportunity for palliative treatment and rest.

Certainly those women gynæcologists who have won fame both in this country and America, and to whom we would naturally look with interest for an expression of opinion on

PLATE XVI.



Uterine Myoma with embedded multiple nuclei removed at the climacteric abdominal hysterectomy. [*To face p.* 120.

this subject, are not to be ranked amongst those who are opposed to operative interference, or who underestimate the consequences of myoma. Mrs. Scharlieb, who has won for herself a distinguished position as an operating gynæcologist, accepts as indications for operation such present conditions as hæmorrhage, pain, pressure on the bladder, ureters, and rectum, invalidism, and the possibility of future degeneration, and her practice is in accord with her expressed opinion. Mary Dixon-Jones, to whom must be accorded the honour of having performed the first pan-hysterectomy in America, says: "I do not believe a woman can have a fibroid tumour, however small, without having direct and sympathetic trouble." Such tumours, she declares, render the whole being physically and morally incompetent; nature is intolerant of them, and the patients are worn out by the disorders resulting from them. She speaks of the dead burden of a fibroma —"no hope of relief, no anticipation, only a sickening prospect, gloomy forebodings, and the saddest possibilities." Such a picture may doubtless be an exaggeration in a proportion of cases; but I quote it as showing how this fearless gynæcologist views the effects of these tumours on her own sex.

Unfortunately, in discussions on the indications for operation, opposing camps have ranged themselves on either side, and much has been asserted and taken for granted by the advocates of non-interference on the one hand, and early operation on the other. The principle *in medio tutissimus ibis* is surely as applicable here as in other rules of practice, and it is that which the profession generally, both in this country and abroad, is settling down to. We might take as an extreme advocate for early operations that admirable American gynæcologist, Charles Noble. He regards the mortality arising from the tumours as much exceeding the mortality of operation for the cure of the disease; and that for the increase in the latter delay in operation is largely responsible. Both Kelly and Noble regard myomectomy as the ideal operation for myoma whenever it can be practised, and on this ground Noble urges that the substitution of myomectomy for hysterectomy, especially during the

child-bearing age of women, should be the great object of the surgeon, and that early interference by this step must be the line on which future progress is made.

Still, it must be remembered that Kelly himself excludes the performance of myomectomy in cases of extreme anæmia, extensive pelvic inflammatory disease, the presence of ovarian or dermoid cysts, or any grave disease of other viscera, and does not extend the indications for myomectomy beyond the limit of a tumour larger than a six months' pregnancy. I have already quoted his protest against operation on insufficient grounds. "The conscientious operator," he says, "should always be able to show that the continued presence of the tumour is in some way a menace to life, or that its presence is incompatible with a comfortable existence." The size of the tumour, pelvic choking, with the production of serious symptoms from pressure, persistent discomfort and protracted and severe pain at the menstrual period (should alternative plans of treatment have failed), rapid growth of the myoma, and exhaustive hæmorrhage unrelieved by curettage and electricity, are amongst the distinct indications advanced by him for operation. Schauta, in his conclusions embodied in his communication to the Amsterdam Congress, said: "Operative interference is not warranted, unless other treatment be futile;" and certainly, from personal observation in the cliniques abroad—in Vienna, Berlin, and Paris—I do not think, speaking generally, that hysterectomy for myoma is performed under other conditions than those that influence leading operative gynæcologists in this country.*

It may be well to thus classify the principal dangers to life which may arise from the presence of a myoma:—

(*a*) Degenerative changes in the tumour . . . . .
- Mucoid.
- Colloid.
- Calcareous.
- Sarcomatous.
- Suppurative.
- Gangrenous.
- Necrobiotic.
- Telangiectatic.
- Adeno-carcinomatous.

* See Appendix.

- (*b*) Adnexal complications
  - Inflammatory and adhesive.
  - Suppurative.
  - Cystic.
  - Solid benign growths.
  - Solid malignant growths.
- (*c*) Bowel complications
  - Obstruction.
  - Adhesions
    - Omental.
    - Intestinal.
- (*d*) Peritoneal complications
  - Peritonitis
    - Pelvic
    - General
      - Acute.
      - Subacute.
      - Septic.
  - Ascites.
- (*e*) Vesical, renal, and ureteral complications
  - Displacement of the bladder and ureters.
  - Adhesions.
  - Obstruction of ureter.
  - Hydro-ureter.
  - Hydronephrosis.
  - Pyonephrosis.
  - Albuminuria.
- (*f*) Circulatory complications
  - Hæmorrhage.
  - Anæmia.
  - Cardiac complications.
- (*g*) Those arising from pregnancy
  - Abortion.
  - Miscarriage.
  - Ectopic gestation.
  - Rupture of the uterus.
  - Malpresentations.
  - Dystocia.
  - Obstructed labour.
  - Postpartum hæmorrhage.
- (*h*) Mental effects
  - The disorder of mentalisation may vary in degree, from the neurasthenic or hysterical state to phases of melancholia, dementia, or mania.
- (*i*) General consequences
  - Under this head we may include such consequences of pressure, as difficulty in walking; inflammatory changes in the tumour due to exposure or traumatism; interference with health, consequent upon pain, weight of tumour, constipation, urinary disturbance, and the depression and apprehension caused by the presence of the tumour.

By clinical observation and examination, the presence of the great majority of these complications may be ascertained, and this knowledge will largely determine us in our prognosis and decision as to operation. A tumour in which there is no evidence of any serious degenerative change, which is not complicated by gross changes in the adnexa, which is causing no serious obstruction to the bowel or displacement of the bladder with incontinence or distress, where neither peritoneal nor ascitic complications are present, and the rapidity or the size of the growth has not to be considered, will certainly not demand interference. Such a tumour can have but little influence on the general health of a woman, though with those of the neurotic and neurasthenic temperament this cannot with truth be said.

At the opening of the discussion at the British Medical Association meeting at Ipswich, 1900, on "The Natural History of Fibroids and Recent Improvements in their Treatment," Mr. Alban Doran closed his paper as follows: "Let us hear to-day what is the safest way, and in the long run the best way, to remove the fibroid uterus when, *as is sometimes the case, it really requires removal*, but let us beware of being reckoned as 'hysterectomy-mongers;'" he also held "that *most fibroids require no operative treatment whatever*" (the italics are mine). Individually, my experience does not coincide with this view of the harmlessness of myomatous tumours, nor do I think that even the odium of being stigmatised as a "hysterectomy-monger" should deter any conscientious surgeon who holds a diametrically opposite view to that of the distinguished gynæcologist I have quoted, from operating. I have, however, given his opinions as those of an extremist, showing how widely authorities differ. They were not shared by the great majority of those who took part in that discussion.

As obvious contra-indications to the operation must be included serious degenerative changes in the kidney or the other abdominal viscera, or profound anæmia, associated with organic cardiac conditions. We should ever act in conformity with the well-defined rule, that the operation is never justifiable when obviously the vital power and resistance of the

patient are not equal to the shock of the operation, unavoidable hæmorrhage, and the post-operative period of pain with other attendant sequences.

There will ever be varying grades in the so-called conservative attitude of surgeons in the field of operative surgery, and we must naturally expect this difference of view to be more pronounced in the case of such an organ as the uterus, and in that of a disease which varies so greatly in its clinical and histological characters as myoma. Nor should we wish it otherwise. The welfare of women who suffer from these tumours is not the more advanced nor is their safety more secured by attempts to restrain the conscientious action of any surgeon alive to his responsibility to his patient and to himself.

On the other hand, the inhibitive restraint imposed on the tendency to rashness in operative gynæcology is duly exercised, the vital power of the woman is considered side by side with the inherent risks of an operation, and a just estimate is arrived at of these risks, as compared with those which must follow from alternative and expectant methods of treatment.

International Medical Congress, Paris, 1900.

At the International Medical Congress there was a discussion on the conservative treatment of uterine myomata. There was nothing very new enunciated by any of the speakers. Myomectomy was advocated in suitable cases by A. Martin (Greifswald), operating by the abdominal or vaginal route according to the multiple or single nature of the tumour, its position, and the condition of the adnexa. Dmitri de Ott also advocated vaginal myomectomy ; for tumours incarcerated in the pouch of Douglas he performs laparotomy, incising the peritoneal covering and decorticating the tumour, plugging the cavity tightly with gauze, one end of which is brought into the vagina, through an opening in Douglas' pouch. In fifty-two cases he had two deaths, and in twenty-seven vaginal myomectomies, one death. Gottschalk advocated ligation of the uterine arteries when the entire uterus was myomatous, not exceeding the size of an adult head, and in medium-sized interstitial myomata. He regards it as specially indicated at the approach of the menopause ; and Gouilloud (Lyons) reported through measurements of its cavity subsequent to ligation on the diminution in size of the uterus. Segond also advocated myomectomy and the cervical route; the tumour, being capable of being drawn downwards, must be free from adhesions, and not reaching above the umbilicus. Pozzi gave a qualified approval of

myomectomy, the abdominal route being followed when the tumour is not large or multiple, or when disease of the adnexa is absent. He also expressed his preference for total hysterectomy rather than myo-hysterectomy. Tuffier and Cullen also advocated conservative myomectomy; while Temoin, one of its earliest advocates, argued that it would never displace hysterectomy, and that it was no uncommon thing for secondary growths to occur from nodules which were not removed at the time.

With regard to myomata and pregnancy, Pozzi stated that in five years he had seen eighty-three cases of myomata in twelve thousand and fifty confinements. He had performed major operations in four cases, operating only under very special circumstances, and regarding neither the size nor the situation of the tumour as an absolute indication; and Hofmeir, after a special study of the effects of myomata on conception, pregnancy, and labour, came to the conclusion that a myoma hinders pregnancy very little, and does not frequently affect the course of the labour. Operative interference during pregnancy he considers to be seldom required, and can only become necessary at its termination. With proper precautions the labour is nearly always accomplished safely.

I am indebted to Dr. Henry Jellett for this brief *résumé* from his abstract of the proceedings of the Congress in the *British Gynæcological Journal*, November, 1900.

CHAPTER VII

RETROVERSION OF THE UTERUS*

I AM here dealing with retro-deviation alone, and I will not therefore complicate the subject by any reference to procidentia or prolapse. Let me briefly enumerate the factors, anatomical and etiological, contributing to the occurrence of retroversion, as also the pathological evidences and consequences of its occurrence, which we may look upon as so universally accepted that it would be waste of time to refer to them in detail.

So many distinguished names are associated with our advance in knowledge in regard to the anatomical and etiological factors at work in the production of uterine displacements generally, that it seems invidious to refer to any in particular. One consistent and persistent labourer in this field must, however, be mentioned in this connection, namely, Professor Schultze, of Jena, whose original and classical work on "The Pathology and Treatment of Displacements of the Uterus" you are familiar with.†

And, first, let us understand what we mean by displacement of the uterus, as also by the term "retroversion."

* This paper was read before the British Gynæcological Society on April 25, 1901. I have omitted the introductory remarks which were necessary to explain the nature of the discussion and its limits. Quite recently the part played by the vagina in sustaining the uterus was fully entered into by Dr. W. J. Smyly and Mr. Jessett in their communications before the Gynæcological Society on "Procidentia and Prolapse."

† "The Pathology and Treatment of Displacements of the Uterus." By B. S. Schultze, Professor of Gynæcology, etc., in Jena. Translated from the German by Jameson J. Macan, M.A., M.R.C.S., etc., and edited by Arthur V. Macan, M.B., M.Ch., Ex-Master of the Rotunda Hospital, Dublin. 1888.

Schultze puts this plainly when he says, "Any uterus that is prevented from taking up the position that is normal to it, when the bladder is full or empty, must be looked upon as displaced." And, again, "that any uterus, the axis of which, even when the bladder is empty, makes with and behind the axis of the pelvic inlet a stabile angle opening outwards, must be described as retroverted." And when, with this diversion, we have a change in the form of the uterus, marked by a curve in the uterine outline with the concavity posteriorly, the state is regarded as a backward displacement with retroflexion. Retroversion, however, as we know, may occur with an anteflexion, as anteversion occurs with a retroflexion. Such flexions we may regard as either physiological or pathological. The former, as Schultze well insists, are but the temporary consequences of pressure exerted on the normal flexile tissues of the uterus; the latter are permanent, and due to inflammatory processes, or congenital and infantile conditions, whether arising intrinsically in the tissues of the uterus, or exerting their influence from without, through abnormalities in the uterine supports, or inflammatory conditions causing adhesions, contractions, and so forth. Thus, you clearly distinguish between the terms "retro-position" or "retro-deviation," and "retroversion with flexion," the former being such altered position, with possible alteration of form, as may occur as the consequence of pressure exerted temporarily on certain points in the axis of movement of the uterus. This, then, is the sole condition that we are considering, and in doing so we have simply to keep in our mind a movable line or axis lying at an angle to the conjugate diameters of the inlet and cavity of the pelvis, determined by, and varying according to, the degree of distension of the bladder in front, or the lower portion of the rectum posteriorly, influenced also by the movements of respiration and pressure from above of the abdominal muscles and the intestines. It may help us also if we imagine the uterus as a lever, the longer arm of which is above, and the fulcrum at the utero-vesical bond of connection. Should the bladder be empty the plane of this axis will lie almost horizontally between the coccyx and the upper border of the pubes,

retreating upwards in proportion as the bladder is distended until it passes behind the axis of the inlet, becoming thus retroposed, and if coincidentally pressure from behind be exerted through the distended rectum on the cervix, this retro-position becomes more decided, so that the axis of the uterus lies somewhere between the body of the second sacral vertebra and the centre of the outlet.

We remember that such physiological movements occur about an axis, determined by the attachments of the uterus, situated at the junction of the cervix with the body of the uterus. Obviously the resultant of any forces acting above or below this axis, whether anteriorly or posteriorly, will move in opposite directions, pressure on the cervix behind raising the fundus, and on the fundus posteriorly, raising the cervix. So far, this is physiological, and given a normal uterus with normal attachments and play of movement, and healthy muscular and ligamentous controlling and supporting structures, the womb can, and does, right itself from temporary displacements consequent upon the varying yet natural conditions under which it is placed, in the inevitable round of functions discharged by the surrounding, and superimposed organs.

There is little new in all this—it is what I taught students twenty years ago, and is the foundation of the right understanding of all abnormalities in position of the uterus and their consequences. The parts played by the ovarian ligaments, the suspensory ligament of the ovary, the broad and the round ligaments, the utero-sacral and utero-vesical folds, in maintaining the uterus in position, supporting it when subjected to unusual pressure, restraining any exaggerated deviation, and restoring it to the normal by their elasticity, resiliency and muscularity, are well understood.

And together with such movements of the uterus we understand how the position of the ovaries must be correspondingly altered in consequence. Just in proportion as the uterus is retroposed, so there is the tendency for the ovaries to lie out of their normal position. But, as Schultze points out, provision against backward gravitation of the ovary is made by the relaxation of the ligamentum ovarii, and the

suspensory ligament of the ovary. However, as we know clinically, it is not uncommon to find, in cases of retroversion and retroflexion, either one or both ovaries lying in the pouch of Douglas.

Again, we need not delay to consider the manner in which abnormalities in the various uterine supports, whether by undue relaxation, loss of tonicity, abnormal positions due to growths, contractions from inflammations and adhesions, inflammatory exudations with consequent shortening and thickening, will convert a temporary reposition or backward flexion into a permanent retroversion or retroflexion. And in this connection we bear in mind the importance of that cellular link in associated movement provided by the cellular tissue between the posterior surface of the bladder and the cervix anteriorly, a link completed behind by the pelvic fascia connecting the cervix with the rectum and sacrum. At the same time we attribute the importance it deserves as a supporting agent to that continuity of structure between the vagina below and the uterus above.

We can, then, readily perceive how retroversion and retroflexion are caused by general atonicity in the abdominal parietes through their redundancy and weight; by habitual disregard of over-distension of the bladder ; by straining in defæcation, with a corresponding habitual neglect of constipation and an overloaded rectum ; by perimetritic inflammations with consequent exudations or adhesions, leading to contractions, limitations of movements, or ultimate want of muscular tonicity and general relaxation of the uterine supports ; by all the associated effects and influences in the growth of the uterus and relaxation of its supports during pregnancy, the want of normal involution subsequent to labour, with corresponding deficiency in muscular recovery in the peri-uterine muscular structures and defect in ligamentous elasticity, not to speak of the permanent abnormal weight of the sub-involuted uterus with its own set of abnormal, physiological, and pathological sequences. Too much stress cannot be laid on this last source, as I shall presently point out, of backward displacement. With it we have frequently associated that impairment of vaginal support, one of the great essentials of

normal uterine position, which leads to limitation of movement, loss of elasticity and tone, with the effects of increase in uterine weight, all combining to affect, not only the uterus itself, but the other pelvic contents.

Other causes of retroversion are tumours, which may push the uterus backwards, whether of the ovaries, in the broad ligaments, or of the bladder, but here it is a case rather of retroposition of the entire uterus than true retroversion, which, if it be present, is more frequently the result of associated adhesions occurring posterior to the uterus. Differences of opinion have, and do, exist as to the causal relation between retroflexion and ovarian tumour. Schultze's view is rather in the direction of retroflexion favouring the growth of the ovarian tumour, and that generally a backward displacement has existed previous to the occurrence of the ovarian growth. That they are often co-existent conditions is proved.

I have spoken of simple backward displacement, but we do not forget that such malposition may, as has been pointed out by Klob, Veit, and Schultze, be attended by a twisting of the uterus to the right or left side, according to the situation of the source of contraction, whether in the broad ligament or a fold of Douglas of either side. Schultze himself divides the anatomical conditions, causing displacement of the fundus backwards, with or without flexion, under five heads:—

(*a*) Puerile uterus, with short vagina, or senile atrophy.

(*b*) Anterior fixation of the cervix.

(*c*) High fixation posteriorly of the cervix, with shortening of one of the folds of Douglas.

(*d*) Shrinking of the posterior, or lengthening of the anterior, uterine wall.

(*e*) Relaxation of the uterine attachments, this including more especially the folds of Douglas and the round ligaments.

We have, in this very brief category, a summary of the principal extra-uterine sources of retroversion. Connected with any of these we may have pathological conditions in the uterus itself, which contribute to the displacement and complicate it. These may be initial factors in its production. Foremost among them is metritis, especially that form which is the result of puerperal processes, leading to hyperplastic

interstitial states, and which has so frequently in its wake chronic endometritis. Metritis, however, is important as a causative factor, from the frequent accompaniment of perimetritis and cellulitis. Tumours also, whether sub-peritoneal or intra-mural, may take their share in the production of a displacement or flexion. This is more likely to occur when the broad ligaments are encroached upon and the normal position of the adnexa is altered, or that the tumour, by its direction of growth, carries the uterus backwards. Given a retro-placed uterus, and an intra-mural myoma, according to its position, will favour a flexion, which, especially if there be no relaxation of the folds of Douglas, will become a retroflexion.

Apart from all such acquired causes of this condition, there are those congenital forms with or without other anomalies, either in the uterus itself, such as elongation of the cervix, undue proportion in the length of the anterior wall, at times associated with vaginal anomalies, or other departures from the normal in the genitalia. Such slight congenital flexions rarely in themselves give rise to more serious troubles than dysmenorrhœa and sterility. I have already touched on the displacement of the ovary accompanying that of the uterus, and experience proves how frequently such backward prolapse of an ovary accompanies a retroversion; further, how inflammatory states of the adnexa, tubal and ovarian, are constantly met with as complications. This, of course, is usually the sequence of metritic and perimetritic inflammation, and has as the most unfortunate attendant, adnexal adhesions and peritoneal contractions.

Instinctively, with such an etiological and pathological summary before us, we divide clinically backward displacements into those in which the uterus is reducible and movable, with or without complications, and those in which the uterus is adherent and irreducible, and where adnexal complications, not necessarily but generally, are co-existent. And such clinical division, if it be somewhat general and wanting in accurate differentiation of causes, has its special practical value in its bearing on treatment in regard to those cases which do, and those which do not, demand operative interference.

I take for granted that for purposes of diagnosis, as well as for manipulative treatment, the dorsal position and the combined method is now adopted by everyone who desires to thoroughly examine the pelvis and to manipulate the uterus and adnexa. In some cases the knee-breast position has its advantages, and is one which I frequently avail of in reducing a retroversion. An anæsthetic also is, in a great number of cases, an absolute necessity. Add to these the *securing of an empty rectum and bladder* and a thorough reliance on one's fingers, and the proper use of both hands, whether abdomino-vaginal, recto-vaginal, or recto-abdominal, and a sound is not in a large proportion of cases necessary either for diagnosis or for purposes of reposition. The semi-prone position of Sims' is, however, often sufficient for our object. The modes of manipulation are not necessary for me to go into in detail. Complete narcosis, with the precautions I have just mentioned, enables Schultze's method of separation of adhesions, and the freeing of the reducible and movable ovaries, to be carried out with safety, though after all such manipulations the patient should receive the greatest care.

"Ovarian adhesions and parametritic cicatrices do not," says Schultze, "admit of forcible correction."

It is many years since, in a paper I read at this society, I pointed out both the value and danger of massage in the treatment of diseases of the internal genitalia. Skilful massage, properly conducted, either through the rectum or vagina, in the dorsal or knee-elbow position, is undoubtedly of the greatest value, combined with other local treatment. It is equally dangerous if casually ordered or unskilfully applied.*

It was my intention to have made an analysis of a large number of gynæcological cases, showing the proportion that suffered from retro-displacements, as also the symptoms of which the latter complained, necessitating their seeking advice. However, I gave up the idea, as I did not think that any practical result would follow from such an analysis. We all know that it may be said of backward displacement and its complications that it is one of the commonest causes, not only of interruption of a woman's health and enjoyment of

* *Vide* "Diseases of Women," 8th Edition.

life, but a forerunner and attendant upon conditions and symptoms which tend to make that life a misery. Few, I think, will dispute this position. And as to the troubles, whether intra-pelvic and local, arising mechanically and directly from interference with the functions of the pelvic viscera and their nervous supplies, or the various visceral and psychic neuroses which we so frequently meet with in displacements of the womb, the consequence of reflected irritation or excitation of the pelvic nerves, they are legion, and have their origin directly or indirectly as reflected neuroses associated with vascular and nervous disturbances in the organs which are affected. This also is a proposition which could be easily demonstrated. Some there are who would make light of the sufferings and the consequences which follow in the wake of true displacements. This is not my experience, and from every point of view I refuse to regard a woman as healthy who has a retroverted uterus.* Psychologists have proved, side by side with gynæcologists, the correlation there exists between displacements and certain mental states, which have completely disappeared with rectification of the error of position, and alienists now universally acknowledge the practical importance of its treatment in the insane.

In dealing with the prophylaxis of backward displacement, any reference to anticipatory and preventive measures must necessarily be a very condensed and concise one. We will take them somewhat in the order in which I have referred to the causes of the condition. First in importance is attention to distention and over-distension of the bladder. Women, for various and obvious reasons, are apt to neglect such distension, and to habituate themselves to its occurrence, resisting the natural demand for relief more than men. Within the last few days a patient of mine just recovering from fixation of the uterus boasted that whereas before the operation she had to pass water several times a day, she could now pass the entire day without discomfort. Only immediately before another patient made almost the same remark under similar circumstances.

* I am not here alluding to certain congenital flexions of the uterus which may not give rise to any symptoms.

It goes for the saying that the most important caution that can be given to a woman who has to wear a support is to empty the bladder at regular intervals. It were well that a like caution were given to all women after a recent labour. Certainly it may be asserted, considering the great importance of the matter, that women generally are not made sufficiently alive to the dangerous consequences which follow over-distension. Constipation and costive bowels are only of secondary importance to the bladder. To prevent rectal overloading, to maintain the tone of the sphincters, to cure hæmorrhoidal conditions, to prevent straining in defæcation, are here our principal indications. I do not speak of affections of either bowel or bladder that may demand special interference for their cure.

Attention to the uterus after labour, especially during the first and second months, has certainly not been given as it ought to have been. Considering that by far the largest proportion of cases of backward displacement are due to post-partum effects, this must be acknowledged. Flaischlen,* of Berlin, in a recent address (for which I am indebted to Dr. J. J. Macan), says: "There is no doubt that many apparently puerperal cases are relapses into anomalous positions that existed during virginity." He likewise insists on the importance of treatment after childbed, and that if there be, notwithstanding reposition, recurrent retroflexion, a pessary should be worn for six months.† Nicholson,‡ of Pennsylvania, in a recent article, quotes Rissman upon the cure and prevention of displacements in the puerperium. Rissman cites Ahlfelds and Fritsch, that we should ascertain the position of the uterus at the end of the first week, and, if it be required, that a pessary should be inserted, and he instances cases in which cure of the retroposition followed this treatment, while the patients were kept as much as possible on the side. Many other authorities are in favour of the introduction of a support at the end of a third week, and

* *Zeit. f. Gehurt, und Gynœk.*

† Rissman, *Munch. Med. Wochen.*, March 6, 1900.

‡ Paper by W. R. Nicholson, M.D., "Digest of Recent Literature, with a special reference to Uterine Displacements." *Univ. Med. Magazine*, Pennsylvania, February, 1901.

Rissman lays special stress on the lateral position with the occasional assumption of the prone position. Whatever view we may hold with regard to these suggestions, I think it is undoubted that the time has arrived for the recognition of the great importance of attention to the position of the uterus during the puerperal month, attention to the involution of the uterus by means taken to secure it, and thorough rectification of any perineal deficiencies. "Indeed," says Flaischlen, "the chief contingent of all mobile retroflexions are those puerperal ones which are not submitted to medical advice for months, or even years, after their origin." Neither can I enter into the consequences of retroversion on the gravid uterus, its effects in abortion and incarceration. When detected, early reposition and the use of a pessary is the obvious course to pursue. Doubtless auto-reposition, with the advance of pregnancy, does happen, but it is not well to rely on it, and reposition under narcosis, properly conducted, should be carried out.

We hear a great deal said of tightlacing, even to the influence it exerts in predisposing to myoma of the uterus, and I have myself taken part in a literary crusade against tight corsets. But I fear we have to admit that retroversion of the uterus is in no way peculiar to the perambulating hourglass shapes that women so delight to assume in order to attract the admiration of the robuster sex. However, a tight corset, speaking medically as well as æsthetically, is anathema maranatha, and we need not here waste valuable time in referring to it.

Only one other group of causes will I allude to in this matter of prophylaxis, viz. pelvic inflammations, whether seriously involving the adnexa or not, leaving in their wake plastic exudations and peritoneal contractions. Seeing the consequences during and after convalescence of such inflammatory processes, I think we may admit that we are too apt to rest content with their immediate control and the recovery of the patient, without the needful rectification of the sequelæ of the attack. Such means as warm douchings, massage of rectum and vagina, more prolonged rest, avoiding the dorsal position, the use of a suitable soft support and the administration of such drugs as are calculated to promote

absorption of the effused products, and finally cold lavements, are some of the means which we may adopt. It is in such cases, when complicated with retroflexion, that the treatment associated with the name of Schultze, which I need not describe, is of such value. I certainly have frequently found great benefit in the absorption of pelvic effusions, adnexal thickenings with enlargement of the uterus, from a course at Woodhall Spa, which I prefer to Kreuznach, from its nearness of access and for climatic reasons, but you can, perhaps, measure better than I the degree of expectant delusion with which some patients are buoyed up by the hypothetical virtues of certain waters and spas.

We now approach the actual treatment of a retroverted or retroflexed uterus which is movable and reducible. Condensed and brief must be my handling of the entire subject of treatment. I think I shall best achieve my object by making a few plain propositions which represent practically what my views personally are.

1. Attention to the different clinical points I have referred to in the anticipation of this displacement would render it of much less frequent occurrence than it is at present. The wider recognition of the causes leading to its earlier rectification when it is threatening or has happened, would effect more rapid and permanent cure.

2. Every mobile and reducible uterus should always be treated in the first instance by a support, which should be worn for a space of time proportionate to the tendency there is on the part of the uterus to revert to the backward position. Associated adnexal conditions are frequently amenable to treatment in such cases, and it should follow the reposition of the uterus.

3. Should the adnexal condition be such as to demand operation, colpotomy is that of selection, with resection of the adnexa and the subsequent use of a support.

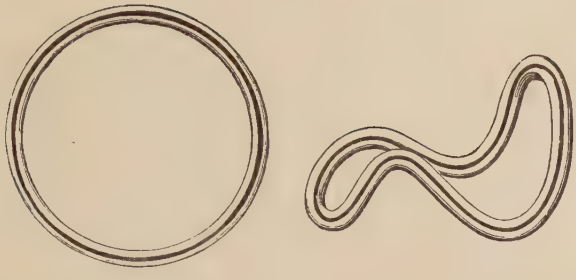
4. An immovable or irreducible uterus, or a reducible uterus in which the associated conditions, either in the uterus itself, in contracting peritoneal folds, or in adnexal adhesions, makes it clear that no pessary will effect a cure or enable the uterus even temporarily to remain in the normal position,

should be treated by operation, the nature of which should depend on the age and child-bearing prospects of the woman; on the amount of adnexal disease and the need there may be for radical interferences; on the condition of the vaginal outlet and perineum; such complications as cystocele or rectocele, and, lastly, on the extent of uterine disease that is co-existent with a displacement, such as metritis, endometritis, or lacerations.

With regard to a pessary, I will dismiss what I have to say in a few sentences. A pessary should always be moulded to fit the particular anatomical peculiarities of the case in which it is applied. Here I show the shapes I generally prefer, and the celluloid with wire rings from which they are quickly moulded out of very hot water. They are but various adaptations of the Smith-Hodge, and generally answer the purpose. Here is a new celluloid cushion pessary, made for me by Messrs. Arnold. The soft Smith-Hodge pessary of Robert Barnes, with a glycerine pad behind, is also a most useful one. *I know of no pessary that more efficiently*, if *as perfectly*, keeps the uterus, after its first replacement, in position, than the vulcanite Fowler. In some cases of retroversion with anteflexion, or with the anterior wall enlarged from any cause, a well-curved Galabin's support is most useful. For wearing finally, after the uterus has been maintained for a given time in position, the glycerine ring is admirable. A well-fitting pessary should neither be immovable in the vagina, nor loose enough to change its position under the ordinary demands of the patient's life. It should not interfere with the rectum or bladder, nor should it press on the urethra. It should be comfortable both in walking and when the patient is sitting. It should be of a material easily kept clean, should not be worn when roughened on the surface, or corroded, should have no apertures or cracks, and be capable of being removed and, where possible, inserted, by the patient herself.

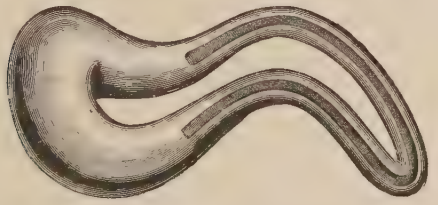
Let me, then, express my opinion that a very large proportion of cases of retroflexion can be treated and cured by the aid of a pessary *; that a smaller number, assuming

* A stem-pessary I never use for cases of retroversion.

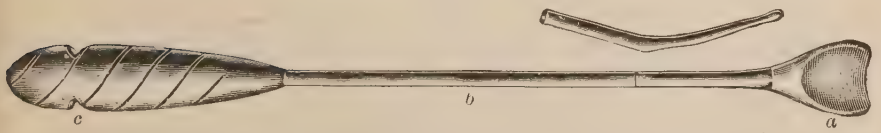


Celluloid Ring, and the same finally moulded for application in retroversion, showing the posterior arm curved to support the uterus. The figure of eight and the sledge-shaped pessary of Schultze can also be moulded from these rings.

The three steps of moulding of pessary.



Celluloid cushion pessary referred to in text.



Author's Extra-Uterine Elevator, Sound, and Repositor—*a*, cupped ivory head ; *b*, shank of silver ; *c*, aluminium flat roughened handle, notched to hold cotton-wool, and form a soft pad.

that the patient may have opportunity and time to avail of treatment, can be cured not only of the displacement, but of its complications, in the same manner. There then remains a proportion of cases which we may divide into two classes. The first embraces those in which the mere replacement of the womb is only part of the cure, and who cannot afford the time for the necessary manipulative or other treatment needed to perfect it. The second includes all cases in which, either from the nature of the displacement or its complications, we cannot hope for a satisfactory result from any mechanical manipulative or other non-operative treatment. In both these classes operation is indicated.

I admit at once that by prolonged and persevering treatment by local absorbents, massage, the assistance of posture, curettage, and a pessary, I have frequently treated and completely cured cases that at first appeared almost incurable ; and I know of many patients who thus suffered who are now strong and healthy women and have borne children.

But recalling the numbers in whom there was no such satisfactory issue, the time, the suffering, and inconvenience involved in the process, I should not now submit them to the same treatment, but should advise operation. Such a course is altogether out of the question in the instance of poorer patients.

It has only been during comparatively recent years that I have come to the decided views I have expressed with regard to operation. This, however, may be readily accounted for by the fact that my practice was, during the earlier years when operative interference was advocated, chiefly limited to those who could afford a prolonged period of treatment, and at a time when the uncertainty of the published results made me chary in advising operation. I have, however, during late years acted on the principles I have stated, and advised operation in certain cases, and where consent has been given, have carried it out. So far as I know, in every instance up to the present the result has been satisfactory. I have had no ill consequence from any operation.

These operations, with the exception of one of Alexander's (in which case I afterwards performed suspension of the

uterus) and one vaginal fixation, in both of which the patients have since borne children, have been all by ventro-fixation or suspension (Kelly), the uterus being fixed either to the fascia and peritoneum, or to the peritoneum and sub-peritoneal fascia alone. Some had either resection of the ovaries or removal of an ovary or ovaries carried out at the same time.

Among the most valuable papers on the subject of operation published within the last few years are those of Delagéniérè,* (Le Mans) and Goldspohn,† of Chicago, read at the International Congress of Gynæcology and Obstetrics at Amsterdam, 1899; and another communication by the same author, June, 1900 ‡; Kohn's paper read before the Munich Congress in 1897; a paper by J. Veit in June, 1900 §; and those already referred to of Rissman and Flaischlen.‖

Most valuable contributions have also been made by Hohl (*Archiv. f. Gyn.*, 1897), Boralevi ("Annali di Obstetricia e Genecologia," Sept., 1897), Luigi Negri ("Annali di Obstetricia e Gen.," 1896), Lapthorne Smith (Amer. Gyn. Soc., May, 1897), Müller's operation (Paper by F. Edge, *Brit. Gyn. Journ.*, August, 1896), Lapthorne Smith (*Amer. Journ., Obstet.*, 1898), Howard Kelly ("Operative Gynæcology," 1898).

The vital points agitating gynæcologists with regard to operation, once any method was determined upon, were: (1) that method most suitable to the mobile and reducible uterus during and after the child-bearing period; (2) that appropriate to retroflexion with adnexal complications and adhesions; (3) the bearing of the method on child-bearing, and the consequences which followed to the parturient

* "Du raccourcissement des ligaments larges et des ligaments ronds dans la rétroversion de l'uterus." Dr. Henri Delagéniérè. Comptes Rendus du Congres Internationale de Gynæcologie et d'Obstetrique, Amsterdam, 1900.

† Goldspohn, *Amer. Gyn. and Obstet. Journ.*, June, 1900.

‡ "Indications, Technique, and Results of an Improved Alexander Operation in Aseptic, Adherent, Retroversions of the Uterus, when Combined with Inguinal Cœliotomy, *vid* Dilated Internal Inguinal Ring." By A. Goldspohn, M.D., Professor of Gynæcology, Chicago, Post Grad. Med. School, Gynæcologist to the German and Charity Hospitals, Chicago. *Ibid.*

§ J. Veit, *Berliner Klin. Wochen.*, June 11, 1900.

‖ *Zeitscrift f. Chir.*, Bd. LVIII., H. 3 and 4.

woman during labour. Abroad, either Alexander's or the Alexander-Adams operation, with various and important modifications, extra-peritoneal or intra-peritoneal, is performed by such well-known gynæcologists as Doléris, Cohn, Kustner, Kronig, Veit, Karl Peters, Delagéniérè, Bamberger, Stocker, Futh, Rumpf, Kocher, Doyen, and others ; in America by quite a number of surgeons, including Goldspohn, Edebohls, Mundé, Parker Newman, Kellog, while Lapthorne Smith, of Montreal, has performed a very large number of operations by this method.

To enter into details of the various operative procedures, in no matter how brief a manner, is obviously impossible. I must content myself with a rather imperfect classification, based on the broad principles on which each operation is devised. The first are those operations in which the round ligament is fixed, as by the original Alexander method, to the external abdominal ring, or the aponeurosis of the external oblique muscles, and the various modifications of this operation, some of which mainly consist in further interference with the inguinal canal, either partially or for its entire length, and the mode of fixation of the round ligament, whether into the processus vaginalis peritonei (Kustner), or still further, as in the operation proposed by Goldspohn, in which, after sufficient enlargement, the round ligament is traced to its place in the broad ligament, and the internal inguinal ring stretched and dilated, is utilised for abdominal exploration and manipulations, or, if necessary, removal of diseased structures. Finally, by purse-string sutures, the round ligament, the peritoneum, and inguinal ring are united, the entire structures consisting of the round ligament, with the internal ring, and the surrounding muscular structures of the internal oblique and transversalis muscles, being anchored to Poupart's ligament. Or again, there is the operation as practised by Delagéniérè, Mann, and several others, in which the round ligaments are reached by an abdominal incision, when they are looped or folded upon themselves, and fixed to the line of Poupart's ligament or to the aponeurosis and walls of the canal. Others again include the loop in that which ties off the adnexa when these are removed.

Edebohls also opens up the inguinal canal for its entire length, and having shortened the ligaments, anchors the various structures round the internal ring to Poupart's ligament, including in the attachment the external ring and the external oblique aponeurosis. The Landaus, I believe, fix the broad ligaments to the peritoneum and subperitoneal fascia, not the uterus, reserving any fixation of the uterus for after the child-bearing period of life.

All these operations, and others of a similar nature, agree in the principle that the uterus shall be held in position by the round ligaments alone, or with the structures with which they are connected in the inguinal canal, and that the point of attachment or suspension be either to the external abdominal ring and aponeurosis or Poupart's ligament.*

* (*a*) Quoting from Cohn, Nicholson says :—"It is interesting to note that the operation of shortening the round ligaments was first performed by Alquié, in the year 1840, in order to support a prolapse, and by Aran, who treated a retro-displaced organ in this way. France, however, was not the country in which the merit of the operation was first established, since the procedure was allowed to lapse until many years later, and was then re-introduced elsewhere. In Germany, Langenbeck and Freund were the first advocates, but to Alexander and Adams the real credit belongs. Cohn, from the results of the Breslau clinic, regards the Alexander-Adams as the best form of operation during the period of possible conception. (*Vide* Nicholson's paper already quoted.) *Zeits. f. Geburt. u. Gynæ.*, XLIII. Band, 3 Heft.

(*b*) Flaischlen says of the Alexander-Adams operation :—"Free from danger and effective, it secures a position for the uterus as nearly as possible normal. The fundus is free, and there is no interference with labour." He himself fastens each ligament with silkworm gut to the lateral angle of the wound in the aponeurosis, and by a row of sutures to the inner side of the aponeurosis, after shortening the ligament from eight to ten centimetres.

(*c*) *Op Cit.*

(*d*) B. Kronig and Feuchwänger (*Monats f. Gyn.* XI., 621, 795) say :—"In uncomplicated retroflexion, as well as in descent of the mobile uterus, the Alexander-Adams operation has, for the last three years, been the operation of choice."

(*e*) Carl Peters, of Dresden (writing in the *Munch. Med. Woch.* S. 1163, April, 1900, of the Alexander-Adams operation in mobile retroflexion), says :—"The operation, which is everywhere being more firmly established, has not as yet been cordially accepted in Dresden as the apt, innocent, and ingeniously contrived method it really is." Referring to Alquié, as the promulgator of the idea of traction of the round ligaments in replacing a prolapsed uterus, he says :—"But Alexander, of Liverpool, and Adams, of Glasgow, were the first, in 1881 and 1882, to describe the technique of the new operation." Peters is a warm advocate of the Alexander method in the cases referred to, and he quotes Füth, Lapthorne Smith, and Rumpf as advocates of the method, besides those authors I have

In the second class of operations the uterus itself is fixed either extra-peritoneally to the vagina, as in the operation of Müller and Duhrssen, or by intra-peritoneal vaginal fixation, as I have so frequently seen it perfectly and rapidly performed by Auguste Martin. There is the method of Vineberg in which vaginal fixation of the round and broad ligaments is secured by anterior colpotomy. In the third class we include those operations of fixing the uterus to the abdominal wall, either by the direct mesial-fixation methods of Leopold, Czerny, Pozzi, and others, or the lateral fixations of Olshausen and Sanger, or in the suspension method of Howard Kelly, by which the uterus is fixed to the peritoneum and sub-peritoneal fascia.

I do not refer to the operation of Mackenrodt, in which the uterus is attached to the posterior surface of the bladder, as it is one which has been generally condemned.

Practically, then, we come to the operation of Alexander, or the Alexander-Adams, with the various modifications of his method, extra-peritoneal and intra-peritoneal; ventro-fixation; suspension of the uterus by Kelly's method, and vagino-fixation. For my own part, operating only in cases in which there are such complications or conditions as absolutely demand interference, I have adopted either ventro-fixation or suspension of the uterus, as I feel that cœliotomy affords the best and safest means of correcting the majority of adnexal complications should they exist, while experience does not appear to have shown, from statistics of the results, that there is any greater danger to pregnancy than by any other methods. However, given a simple case of mobile and reducible uterus, there can be no doubt, from the mass of evidence before the profession, that the Alexander, or the Alexander-Adams operation, is on all grounds the classical method of dealing with the condition. The mortality of either uncomplicated operation is practically nil.

I cannot now deal with a mass of statistics bearing on

already referred to in my paper, as operating by the inguinal canal. Carl meets all the objections to an Adams operation in his paper. He reviews the whole history of the operation from the eighties to the present day. The entire paper is an able defence of the operation performed in suitable cases.

this question, and also on many other points on which I should like to touch. I have gone into the records of 1140 operations, and I find that of these but two cases had died. Many operators loop intra-peritoneally the round ligaments, as originally advocated by Delajéniérè, Mann, and Jacobs, or it is fixed into the loop which ties off the ovary and tube, should these be removed. On the other hand, some operators fix the broad and round ligaments to the parietal peritoneum. Vineberg's operation of vaginal fixation of the broad and round ligaments have not, in that operator's hands, been followed by any death. Howard Kelly, in his utero-suspension cases, has not had more than one per cent. of failures.

If we review the statistics as published by a number of operators up to the present year, the choice would appear to lie mainly between three procedures, or the modifications of these. (1) the Alexander-Adams operation, (2) ventro-fixation, and (3) Kelly's utero-suspension. I do not know what the recent statistics of Auguste Martin's vagino-fixation operations are, but up to the time I left him, at the end of 1896, he had performed over 400 vaginal operations, with only four deaths. It is clear to me that Alexander's operation, and so I have found it myself, is not the simple procedure that it is represented by some, and I am inclined to think that the originator himself takes rather an optimistic view of the facility with which the round ligaments are found, and the same may, without exaggeration, be said of the tendency to failure in a certain proportion of the cases in which the technique has been most carefully carried out. The modifications of the procedure which are forced through such considerations, even upon the most expert operators, may be taken as evidence that this is so. The age of the patient, the complications of the displacement, the operators' views with regard to the influence of the special operative interference on pregnancy and labour, are the points that must determine the selection of any operation. I cannot, however, close this chapter without expressing my appreciation of the value of the inspiration which first suggested to Dr. Alexander the idea of correcting backward displacements by his operation of shortening the round ligaments—an

inspiration which must always link his name with the operative treatment of this condition.

Professor John Taylor (Birmingham), at the discussion on this paper, in discussing the relative advantage of the various operations, stated that he found Kelly's operation of uterine suspension as free from defect as any purely fixation operation can be, and he had never met with any serious post-operative sequelae. Still, he believes that Alexander's operation is the best operation for uncomplicated backward displacement. He uses fine ophthalmic silk as a buried suture to entirely close the wound in the external oblique and to sew the upper end of the ligament to the under surface of the aponeurosis. He knows but few operations that give both surgeon and patient more unalloyed and permanent satisfaction. He objects to ventro-fixation on account of the abnormality in the new position of the uterus, and to vagino-fixation, from the tendency to recurrence of the displacement and from the greater dangers accruing at the time of delivery.

Dr. William Alexander, in the discussion on this paper, maintained that time, skill, and care failing to cure, operative interference was called for, and the only operation he performs for backward displacement is shortening of the round ligaments, and this whether the uterus be free or adherent. In the latter of these conditions, which he maintained was rare, he opens Douglas' pouch, passes in the finger, and breaks down adhesions, until the uterus can be pushed forward into anteversion. He then packs the vagina with gauze, and shortens the round ligaments. If an adnexal tumour be present, he removes it by the vaginal opening. He attaches no importance to the direction in which the ligaments are drawn out. The secret of finding them is to cut down on the external oblique, which is a distinct glistening structure, and then to seek for the extrusion of the external abdominal ring. Only in about one per cent. of cases are they too thin or too brittle to pull out, and an apparently delicate ligament, when pulled a little way out of the canal, often proved thick and strong. He does not operate upon very old people.

Special points to remember.—These are the points which I consider of the greatest importance for practitioners to remember in regard to backward displacements.

1. In making a diagnosis, should there be any cause for doubt, to have the rectum and bladder emptied, and examine the patient bi-manually, with two fingers in the rectum by the recto-abdominal, as well as by the vaginal method. The semi-prone position and that of the knee-elbow should also be availed of, as both throw valuable light on the relation of the ovaries to the uterus, as well as on the mobility and size of the uterus and adnexa.

2. Anæsthesia is essential for a correct diagnosis in certain cases. In conducting examinations under anæsthesia and manipulations of the adnexa, unnecessary force should be avoided. The possibility of mistaking an enlarged ovary for the uterus must be remembered. This caution also refers to other tubal and cystic collections in Douglas' pouch. Special care should be taken if the sound is used with an anæsthetic.

3. The knee-elbow position, with the empty rectum and bladder, will be found a most valuable aid in replacing the uterus by the bi-manual method. When thus replaced, the pessary selected, one suitable in size and shape, can be inserted, and supported by the finger until the patient is again in the lateral position.

4. The sound is useful for estimating the size of the uterus and the degree of flexion ; in the diagnosis of extra-uterine and associated tumours, especially by the vesico-vaginal and recto-vesical methods of examination. It is dangerous as a repositor where there are adhesions, or the results of recent pelvic inflammations. It is not justifiable to use force with the sound in attempts to replace the uterus with it, and should it be employed as a repositor it must not be rotated on its axis, but used to raise the uterus in the proper manner. When the sound has been used for therapeutic purposes, precautions should be taken subsequently, by enjoining the necessity for rest, avoidance of cold or exertion, or other indiscretion on the part of the patient. The sound should always be rendered aseptic before use. The possibility of a retroverted and pregnant womb has always to be borne in mind.

5. As already stated, in the great majority of cases the sound is unnecessary for the purpose of diagnosis, and only in a certain proportion of cases is its use demanded as a repositor if the bi-manual method be carefully carried out.

6. In the treatment of retroversion, should massage be indicated, the rectum and bladder ought to be emptied beforehand. It is best administered in the semi-prone and knee-elbow position. The vagina having first been douched out with some antiseptic, and the fingers of the operator

lubricated with lysol, the degree of force used must be carefully proportioned and gradually increased in the manipulation of adhesions, according to the sensitiveness and resistance of the uterus, and the relations and condition of the adnexa. The posterior cul-de-sac, the patient being in the knee-elbow position, after the massage, is packed with ichthyol, glyco-thymolin, and glycerine tampons. (Solution of ichthyol 10 per cent. one part, glyco-thymolin one part, glycerine three parts.) No pessary should be worn until the uterus is got into as fair a position as possible. It is well to get the patient a few times in the day to assume for some minutes the knee-elbow posture. All patients under treatment, and after the uterus has been restored to its normal position, should be directed to empty the bladder at regular intervals.

7. The most important step towards the cure of many cases of retroversion, especially those in which some form of endometritis, with enlargement of the uterus, hyperplastic or otherwise, complicates the displacement, is thorough curettage. The necessary dilatation of the uterine canal, the reduction of congestion, and the general improvement in the size of the uterus and the state of the adnexa which usually follow a complete curetting, render the restoration of the uterus to its position more easy, facilitates the carrying out of any necessary manipulations, and renders the cure more permanent and satisfactory.

8. Displacements that do not yield to such palliative treatment, that pessaries fail to cure, that are complicated with disease of the adnexa, that cause symptoms seriously interfering with the health of the woman, and which prevent her following her avocation, demand operative interference, and such operative interference will be largely influenced in its nature and technique by the circumstances I have already detailed.

APPENDIX

Abdominal Toilet *

Dr. Charles Noble, in a paper read before the Obstetrical Society of Boston, November, 1899 (*Boston Medical and Surgical Journal*, March 8, 1900)—"Remarks upon the Influence of Technique on the Results of Closure of Wounds in the Abdominal Wall"—thus describes his method of closing cœliotomy wounds: "(1) The peritoneum is closed with fine cumol catgut (Plate I., Fig. 1); (2) the aponeurotic sheath of one rectus muscle (the right) is then separated from the muscle by blunt dissection, thus baring the under surface of the aponeurosis. The upper surface of the aponeurotic sheath of the left rectus muscle is then dissected clear of fat with a knife, with the object of suturing the under surface of the right aponeurosis upon the upper surface of the opposite aponeurosis. The suturing is then begun by passing the needle, armed with medium chromicised catgut (sterilised by the cumol method), through the aponeurosis of the rectus muscle of the left side of the wound, and thereafter by continuous suture closing the rectus muscle until the opposite end of the wound is reached. The needle is then brought from below upward through the aponeurosis upon the left side of the wound. The aponeurotic layer is then closed by passing the needle from below upwards through the aponeurosis of the left side, as in the Lembert intestinal suture; and again from below upwards through the aponeurosis of the left side, as in the Lembert intestinal suture; and again from below upward through the aponeurosis of the right side, and so on until the end of the wound is reached, when a single knot completes the closure of the muscles and fascia (Plate I., Fig. 2). The subcutaneous fat is then closed with a continuous catgut suture in one or more layers, using fine catgut. The skin is next closed by the intracuticular stitch with fine catgut."

* See Chapter I., Plate I.

The Degenerations of Myomata.*

Prochownick, at the Hamburg Medical Society, on March 10 (*Münch. m. Wchns.* 1901, No. 19), stated that upon investigating all the cases of uterine myomata that he had met with in the course of the last 25 years, he had found that, even with the most careful and painstaking conservative treatment, barely three-fifths of the sufferers had been conducted past their climacteric, and then remained permanently cured. In the other two-fifths, operation became a matter of necessity, in many after the normal, in some after an artificial menopause; of 32 castrated women, 9 had to undergo a subsequent operation. At the same time, he declared that the indications for interference were to be deduced from persistent study of the anatomy of these tumours and from clinical observation, aided by all modern means of research, and not from the improved technic and better prognosis of operation.

He enumerated the following kinds of degeneration :—

1. Simple systemic degeneration without alteration of the morphological structure of the tumour; due entirely to the clinical effects of the growth, generally to the hæmorrhage (anæmia, hydræmia, heart affections), less frequently to pressure or tension (bladder, ureters, kidneys).
2. Degeneration of the tumour:
   (*a*) Innocent and relatively normal changes—Atrophy, Calcification, Adiposis.
   (*b*) Degenerations anatomically innocent, but clinically malignant.

   Of these latter a considerable number are originally due to the clinical effects of the tumour before it has undergone any change (alteration in the composition of the blood from hæmorrhage). Acute forms are uncommon (torsions, thromboses, hæmorrhagic infarcts, accidental infection or gangrene, generally due to therapeutic measures). Sub-acute forms are not so rare (necrobioses, which clinically and anatomically are analogous to a dead fœtus). Chronic forms are more often seen (fibrinous, myxomatous and cystic degeneration). Telangiectatic and mechanically inflamed myomata (with or without chronic infection) also belong to this category.

(These various forms of degeneration were illustrated by

* I am indebted to Dr. J. J. Macan for this abstract.

specimens, as well as the special group of adeno-myomata, the existing opinions on which were shortly discussed.)

(*c*) Degenerations anatomically malignant.

Prochownick held that when associated with myoma, Sarcoma is due to metaplasia, Carcinoma to invasion from without.

Clinically, a distinction must be made between the degenerations which occur before and after the menopause; the latter are always more serious and of more unfavourable prognosis, and operation, if to be done at all, should be done early.

The gradual progress of systemic degeneration can be accurately observed by repeated examination of the blood (estimation of the hæmoglobin before and after the menstrual flow, enumeration of the red corpuscles, leucocytosis, charting the hæmorrhage curve). A decrease of the hæmoglobin below 65 or 60 per cent., or of the red corpuscles below 2,500,000 without recovery in the interval, is an urgent indication for interference, as also is a slow but steady fall in the number of reds with a constantly decreasing recovery between the bleedings.

In morphological degeneration also, even if the patients do not suffer from very serious hæmorrhage, regular examinations of the blood are of much clinical importance; a slow fall in the figures, and alterations in the leucocytes, accompany all chronic changes in the tumours.

As points to which special attention should be directed, Prochownick instanced—the seat and number of the tumours and their arrangement in and about the corpus uteri; their growth and consistence, any sudden or rapid enlargement being very ominous; any change in the type of the catamenia; pains, which at their onset are generally due to tension upon the parietal peritoneum, and then always suggest the presence of some inflammation; the urine—a specimen taken with a catheter—should be examined frequently, renal irritation almost invariably occurs early in anatomical changes, even in those at first innocent. Alteration in the shape of the heart and in the quality of the pulse are associated with every form of degeneration; and the weight and specific heat of the body, the fundus of the eye, the facial expression, the condition of the skin, and the appearance of ascites are not to be neglected. Degeneration of a myoma is not, any more than other malady, betrayed by one symptom, but by the concurrence of several.

In the discussion:—Frænkel confirmed the results of Prochownick's investigations from his own experience in the post-mortem room. Operation was justified by the fact that the body had no

power to get rid of the products of the decay of these tumours spontaneously. He was not sure that regressive changes in a myoma should be called malignant, and would himself characterize a tumour as such only when metastases were found in other parts of the body; he had met with one such case in which, after the extirpation of the myoma, both lungs were found to be infested with myomatous nodules, and the primary and secondary growths proved to be identical histologically; simple myoma with glandular elements.

Lauenstein said, that in 1887 he had seen the suppuration of a large myoma caused by an erysipelas, which had wandered all over the body of a woman who was approaching her climacteric. He contracted erysipelas, followed by lymphangitis, from infecting his finger while operating on the case.

Prochownick acknowledged that both cases were apposite and of exceptional interest; he had not met with similar ones himself.

At the meeting of the British Gynæcological Society on July 11th, at which a paper was read by Dr. Charles Noble, of Philadelphia, the following specimens of degenerations and complications of myoma were exhibited:—

THE PRESIDENT:
Necrobiotic Degeneration with Pregnancy.

Dr. STANMORE BISHOP:
Calcareous Degeneration.
General Necrosis.
Localised Necrobiosis.
Cystic Degeneration.

Dr. WILLIAM DUNCAN:
Mucoid Degeneration.
Cystic Degeneration.
Ditto ditto
Cystic Fibroids in Broad Ligament stringing from the back of the Cervix Uteri.

Dr. HANDFIELD JONES (St. Mary's Hospital Museum):
Cystic Degeneration.
Calcareous Degeneration.
Ditto ditto
Ditto ditto
Myoma with Pregnancy.
Adenomatous Cystic Uterus, with Polypi and Malignant Ulcer.

Dr. MAYO ROBSON:
Sarcomatous Degeneration.
Telangiectatic Degeneration.
Cystic Degeneration.
Calcareous Degeneration.
Suppurative Degeneration.

Dr. MACNAUGHTON JONES:
Necrobiotic and Calcareous Degeneration.
Multiple Myoma with Mucoid Degeneration.
Fibro-Adenoma of Ovary, complicating Myoma.
Myoma with Carcinomatous invasion.

MASTER OF THE ROTUNDA (Dr. PUREFOY):
Telangiectatic Degeneration.

Dr. HERBERT SNOW and Mr. CHARLES RYALL:
Uterine Monoma—
(a Malignant Myoma—Soft Œdematous Myoma.)
Ditto

Mr. BOWREMAN JESSETT:
Cystic and Sarcomatous Degeneration.
Sarcomatous Degeneration.
Carcinomatous Degeneration.
Myoma of Uterus with Pregnancy.
Ditto ditto
Ditto ditto
Myoma with Ovarian Cyst.

Mrs. SCHARLIEB:
Sarcomatous Degeneration.
Soft, Œdematous, Mucoid Degeneration.

Mr. TARGETT:
Cystic Degeneration.
Calcareous Degeneration.

Dr. GILES:
Cystic Degeneration.

Mr. CHEATLE:
Myoma with Carcinoma.

DR. STANLEY BOYD:
Suppurating Myoma.
Cystic Degeneration.

In the Museum of the Royal College of Surgeons of England there are in all 47 specimens marked definitely as fibrous tumours of the uterus. Of these, 33 are described as having undergone ulceration, degeneration, or been complicated by adhesions, pregnancy, or ovarian tumours. These we may divide as follows:—Pressure of ureters, 1; ulceration of the tumour, 3; ulceration of the vagina, 1; calcification, 3; cystic degeneration, 1; with complications of the adnexa, 6; with pregnancy, 5.

In St. Bartholomew's Hospital Museum there are examples of the following degenerations and complications:—Cystic degeneration, 3; calcification, 2; myoma complicated with diseases of the adnexa,

5; myoma with cancer, 1; degenerating myoma with cavity containing serous fluid, 1.

In University College Hospital Museum there are the following:—sloughing myoma, 1; fungoid degeneration with ulceration, 1; suppurating myoma with calcareous degeneration, 1; calcareous degeneration with adnexal complications, 2; calcareous degeneration alone, 5.

In the Westminster Hospital Museum there is 1 specimen of calcareous degeneration. In St. George's Hospital Museum there are 4 specimens of calcareous degeneration of myoma, 2 of myoma complicated with pregnancy, 1 of myxomatous degeneration, and 1 of fibro-cystic degeneration.

The search in the various museums establishes the contention that discussions on the surgical treatment of myoma of the uterus have been in a sense hitherto conducted in the dark; countless specimens have been exhibited without any pathological examination having been made, in many instances not even cut open—exhibited as evidences of surgical skill and triumph, and often not even of the latter. It is to be hoped that the wholesale destruction of specimens of myoma without examination which has gone on in the past will cease, and that at societies no specimen will be exhibited which is not thoroughly exposed throughout and pathologically reported on. The day has gone by for the presentation of a tumour, no matter what its size, unless its pathological significance be at the same time illustrated and exposed.

Complications and Degenerations or Fibroid Tumours of the Uterus.

Dr. Charles Noble read a paper at the British Gynæcological Society on July 11, 1901, on the complications and degenerations of uterine fibroids as bearing upon their treatment.

Examination of 218 cases of fibromyoma uteri operated on up to May 24, 1901, shows that the complications were such as to lead, in 66, to inevitable death (apart from 5 cases of malignant disease with fibroma, beyond operation), to threaten life in 25, and to leave 30 of the remaining patients permanent invalids. Probably at least 78 would have died from the complications, and 15 more from the direct effects of the tumours (hæmorrhage, &c.), a total of 93, or an estimated mortality of 42 per cent. Even if the cases of malignant disease and large ovarian tumours were not included, at least a third

of the patients would have died as a result of the tumour or its complications.

The following were the conclusions arrived at by Dr. Noble :—

Having emphasised the fact that his object in making the communication was to lay stress upon the point that uterine myomata are not the simple and harmless growths that they are by many looked upon as, and that they are frequently associated with serious complications, possibly accidental, or, on the other hand, secondary to and caused by the tumour, gave the following as his conclusions.

The disappearance of fibroid tumours as a result of the menopause or of pregnancy is not to be expected, and is merely one of the curiosities in the history of these growths. The menopause may not bring any improvement, and even if it should necrosis may occur subsequently. Twelve patients were over 50 when they sought relief for sufferings that, according to classical teaching, should have been already, at all events symptomatically, cured. A large proportion of the women menstruated till they were past 50, one till her 55th year. In women with fibroids the menopause is delayed from 3 to 10 years. Only 91 had been pregnant, some of the other 127 were unmarried ; this accords with the accepted connection of fibromata with sterility.

Adhesions, in many cases a marked feature in the above cases, undoubtedly increase the difficulty and risk of operation ; phlebitis and embolism proved a source of danger both before and after it.

Anæmia, which was pronounced in many instances, materially increases the risk of ether narcosis, shock, œdema of the lungs, and sepsis. When established, it is difficult, or impossible, to cure ; when chronic, its secondary effects, especially upon the nervous system, are most intractable.

Thrombi may form in the vessels of the tumour, be detached and cause sudden death, or infection of the lungs or other organs ; fatty or hyaline degeneration or atheroma of the walls of the heart or blood-vessels are not uncommon.

Benign fibromyomata may undergo sarcomatous, but not carcinomatous, change. The penetration of the capsule of a fibroid by an adjacent carcinoma is very rare. The glandular elements of adenomyomata seem sometimes to have acquired malignant properties.

Deaths directly due to fibroids are seldom recorded, as when the symptoms become grave operation is generally resorted to ; yet Bishop has collected 37 fatal cases. Classical teaching as to the gravity of these tumours is quite wrong ; if left alone, more than one-third of my cases would have ended fatally, from one-half to

two-thirds would have become confirmed invalids, and of the remainder but few would not have been considerably incommoded. The percentage of fibroids found more or less accidentally is quite small.

The mortality of hysterectomy and myomectomy for fibroids varies from 2 to 10 per cent., depending on the gravity of the cases, the operator and the environment; that of the tumours, their degenerations and complications, is upwards of 33·3 per cent., as compared with less than 10 per cent.; the morbidity also is much less after operation than without it. Early interference not only greatly lessens the mortality, but, what is of more importance, does away and shortens convalescence, and does away with the prolonged invalidism which is otherwise unavoidable.

Each case must be treated on its own merits. He had met with few fibroids unattended with symptoms, and therefore he believes that there are but few cases in which operation is not more advisable than expectancy.

International Medical Congress, Paris, 1900.

At the International Medical Congress there was a discussion on the conservative treatment of uterine myomata. There was nothing very new enunciated by any of the speakers. Myomectomy was advocated in suitable cases by A. Martin (Greifswald), operating by the abdominal or vaginal route according to the multiple or single nature of the tumour, its position, and the condition of the adnexa. Dmitri de Ott also advocated vaginal myomectomy; for tumours incarcerated in the pouch of Douglas he performs laparotomy, incising the peritoneal covering and decorticating the tumour, plugging the cavity tightly with gauze, one end of which is brought into the vagina, through an opening in Douglas' pouch. In fifty-two cases he had two deaths, and in twenty-seven vaginal myomectomies, one death. Gottschalk advocated ligation of the uterine arteries when the entire uterus was myomatous, not exceeding the size of an adult head, and in medium-sized interstitial myomata. He regards it as specially indicated at the approach of the menopause; and Gouilloud (Lyons) reported through measurements of its cavity subsequent to ligation on the diminution in size of the uterus. Segond also advocated myomectomy and the cervical route; the tumour, being capable of being drawn downwards, must be free from adhesions, and not reaching above the umbilicus. Pozzi gave a qualified approval of myomectomy, the abdominal route being followed when

the tumour is not large or multiple, or when disease of the adnexa is absent. He also expressed his preference for total hysterectomy rather than myo-hysterectomy. Tuffier and Cullen also advocated conservative myomectomy; while Temoin, one of its earliest advocates, argued that it would never displace hysterectomy, and that it was no uncommon thing for secondary growths to occur from nodules which were not removed at the time.

With regard to myomata and pregnancy, Pozzi stated that in five years he had seen eighty-three cases of myomata in twelve thousand and fifty confinements. He had performed major operations in four cases, operating only under very special circumstances, and regarding neither the size nor the situation of the tumour as an absolute indication; and Hofmeir, after a special study of the effects of myomata on conception, pregnancy, and labour, came to the conclusion that a myoma hinders pregnancy very little, and does not frequently affect the course of the labour. Operative interference during pregnancy he considers to be seldom required, and can only become necessary at its termination. With proper precautions the labour is nearly always accomplished safely.

I am indebted to Dr. Henry Jellett for this brief *résumé* from his abstract of the proceedings of the Congress in the *British Gynæcological Journal*, November, 1900.

Anæsthetics. (*Vide* Plate III., Chap. I.)

I have now determined to use chloroform for six months in all my abdominal cases, and watch the effects. I have come to this resolution from some recent serious gastro-intestinal symptoms which I believe were induced by the ether. I refer to ether vomiting, foul breath and tongue, with rapid coating of the latter and great fætor of the evacuations, as also to distressing cough and bronchial complications arising from the same causes.

I am inclined to think that these post-operative consequences of ether are the cause of death in certain patients on whom ether anæsthesia has a decidedly pernicious effect. The notes of such cases as those I here refer to I hope to record at a future date.

THE END

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